

October 26, 1942

A HISTORY OF LUMBERING IN THE TRUCKEE BASIN
from 1856 to 1936

by

Constance Darrow Knowles

An office report from the bibliographical research conducted
under WPA Official Project No. 9512373 for the Forest Survey
Division, California Forest and Range Experiment Station.

Directed by R. C. Wilson, Assistant Forester.

- - -

With annotations by Robert M. Trespel and Donald L. Drake
Annotations completed on April 15, 1991

Table of Contents

PREFACE - THE BEGINNING OF LUMBERING IN CALIFORNIA	1
INTRODUCTION - HISTORICAL DEVELOPMENT	3
LOCALE OF STUDY	3
FIRST OPERATIONS IN THE AREA	3
FIRST MAIN LOGGING PERIOD, 1859 THROUGH 1867: CUTTING ON THE EDGES OF THE TRUCKEE BASIN	6
GROWTH AND SPREAD OF MILLS TO SUPPLY THE DEMANDS OF COMSTOCK AND SETTLEMENTS	6
EARLY LUMBER OPERATORS IN THE COUNTIES OF NEVADA(DOUGLAS, ORMSBY, WASHOE)	8
PEAK OUTPUTS OF DOUGLAS, ORMSBY AND WASHOE COUNTIES FROM 1859 THROUGH 1867	12
DEVELOPMENT OF THE V-FLUME	13
EARLY LUMBER OPERATORS IN THE COUNTIES OF CALIFORNIA (SIERRA, NEVADA, PLACER AND EL DORADO)	14
DECLINE OF LUMBERING ON THE NEVADA SIDE DUE TO SLUMP IN COMSTOCK ORE PRODUCTION.	15
SECOND MAIN LOGGING PERIOD, 1868 THROUGH 1880: CUTTING IN THE HEART OF THE TRUCKEE BASIN	16
CALIFORNIA REGION	16
DEVELOPMENT OF LUMBERING INFLUENCED BY BUILDING OF THE CENTRAL PACIFIC RAILROAD	16
LEADING OPERATORS, 1868 THROUGH 1880	17
EFFECT ON THE CALIFORNIA REGION OF THE BUILDING OF THE VIRGINIA & TRUCKEE RAILROAD, 1869 - 1872	25
NEVADA REGION	26
DEVELOPMENT OF LUMBERING FACILITATED BY BUILDING OF THE VIRGINIA & TRUCKEE RAILROAD, 1869-1872	26
LEADING OPERATORS, 1868 THROUGH 1880	27
DECLINE OF LUMBERING THROUGHOUT TRUCKEE BASIN DUE TO FINAL SLUMP IN COMSTOCK ORE PRODUCTION	32
PEAK OF LUMBER PRODUCTION IN 1877: LUMBER PRODUCTION OF THIS PERIOD, 1868-1889	33
THIRD PERIOD, 1881 THROUGH 1909: TIMBER CUTTING IN THE TRUCKEE BASIN BEGINS TO TAPER OFF	34
MOST (SEVEN) OF THE LEADING COMPANIES TERMINATE OPERATIONS BY 1909	36
SMALLER OPERATORS OF THIS PERIOD, 1881 THROUGH 1909	40
FOURTH PERIOD, 1910 THROUGH 1936: DEPLETION OF TRUCKEE BASIN VIRGIN FOREST	45
SMALLER OPERATORS OF THE FOURTH PERIOD, 1910 THROUGH 1936	45
THREE LAST BIG MILLS IN THE AREA	46

PREFACE - THE BEGINNING OF LUMBERING IN CALIFORNIA

The Truckee Basin was one of the last regions in California to have its forest resources developed. Lumbering began in the Truckee country in 1856, more than twenty years after the first sawmills began cutting timber in other areas of California.

California's first sawmill was built in Sonoma County in 1835 but it is remarkable that even in that era of sawmills lumber was cut and exported from Sonoma County to the Hawaiian Islands by the Russians. While they maintained an anchorage at Bodega Bay and a settlement at Fort Ross from 1812 to 1841, the Russian colonists whipsawed redwood, oak and Douglas Fir for their own needs and also turned out surplus for shipping. According to the French navigator, Duhaut Cilly, who visited them at Fort Ross on June 4, 1828.¹

All the buildings of Ross are of wood..... M.Chelicoff[Paul Shelikof, Commandant] cuts a great quantity of boards, small beams, thick planks, etc., which he sells in California, the Sandwich Islands [Hawaiian] and elsewhere: he even has entire houses built which may then transported taken apart [knocked down]. The trees he cuts are almost all firs of various species and, in particular, the one called palo colorado (redwood).

And in the County of Sonoma California's first sawmill, also in the vicinity of Bodega, began operating a water driven plant in 1835. This mill was built by James McIntosh, James Dawson and James Black, "the very first settlers, except the Russians, in all the Bodega country."² They ran the mill until 1849 when they sold it in order to join the gold rush. This was probably the only sawmill built during the 1830's in California.

In the 1840's Bodega Bay again figured prominently with respect to early lumbering for 6 miles from this harbor in 1843 Stephen Smith, master of a small trading vessel from Baltimore, built the first steam sawmill ever put up in the redwoods north of San Francisco Bay³.

As early as 1834 John Read obtained from the Mexican Government a grant to one square league of land in the vicinity of Corte de Madera in Marin County. This rancho was called Corte de Madera del Persidio, meaning where wood is cut for the Persidio (at San Francisco), for the forest on this land had supplied

¹Bernard du Hautcilly, Auguste. 1834-35. Voyage autour du monde, principalement a la Californie et aux iles Sandwich plendant les annees 1826, 1827, 1828, et 1829. 2v., illus. Paris. See Volume 2, pages 221 and 225.

²Thompson, Robert A. 1877. Historical and descriptive sketch of Sonoma County, California. 104 pages, illustrations. Philadelphia. See pages 97-98.

³Bancroft, Hubert Howe. 1890. History of California. 7 v. San Francisco. See volume 7 page 76.

timbers and lumber for the Persidio buildings⁴. "Soon after 1840" Read built a water-driven sash sawmill in the ravine about a half mile southwest of his ranch house⁵.

In 1841 Peter Lassen put up a mill on his half league of land near Santa Cruz which he sold shortly after to Isaac Graham⁶. And in Napa County two years later George Yount Started a sawmill on his La Jota Rancho and was the first person to make shingles in Alta, California, supplying shingles for Village's home at Sonoma⁷.

In the foothills of the Sierra Nevada, El Dorado County's first sawmill was built on the Consumes River by William Daylor after he had left the service of John Sutter⁸. In northern California Peter Lassen builder of the first sawmill in Santa Cruz County, gave Tehama County its first sawmill which he put up on his ranch on Deer Creek in 1845⁹. Down in southern California San Gabriel Mission had a sawmill in 1846.¹⁰

Until 1852 California's lumber supply had to be supplemented by imports from the Atlantic States but from 1853 there was a definite increase in the amount of lumber produced in California¹¹. From then on lumbering developed into an essential industry in several regions: on the western flank of the Sierra to meet the mining demands of the gold rush, in the northern California Counties of Siskiyou, Trinity and Tehema, and in the San Bernardino Mountains. In the redwoods along the California coast, lumbering operations continued to expand. By 1860 the sawmills of California numbered more than three hundred and their aggregate cut was almost 111 million feet¹².

⁴Munro-Fraser, J. P. 1880. History of Marin County. 516 pages and illustrations. San Francisco. See pages 385 and 389.

⁵Bancroft, Hubert Howe. 1890. History of California. 7 vols. San Francisco. See 7th volume page 76

⁶Anonymous. 1859. Peter Lassen. Hutchings' illustrated California Magazine. 3: 350-352. See page 352.

⁷Camp, Charles Lewis. 1923. The chronicles of George C. Yount. California Historical Society Quarterly. 2(2):3-66. See page 55.

⁸Nasatir, Abnraham Phineas, Ed. 1934. The French Consulate in California, 1843-1856. California Historical Society Quarterly, 13(1): 56-79. See page 79.

⁹Ide, Simeon. 1880. A biographical sketch of the life of William B. Ide. 239 pages. Claremont, N. H. See page 46.

¹⁰Bancroft, Hurbert Howe. 1888. California Pastoral. 808 pages. San Francisco. See chapter 34, page 458.

¹¹San Francisco Daily, Alta, California, October 21, 1853. See page 2, col. 2.

¹²California Surveyor General. 1861. Annual report...for the year 1860. 89 pages (Sacramento). See Table 2 following page 30.

INTRODUCTION - HISTORICAL DEVELOPMENT:
FOUR MAIN LUMBERING PERIODS
GROWING OUT OF CERTAIN ECONOMIC DEVELOPMENTS

The lumbering developments in the Truckee Basin may be logically grouped into four periods: The earliest was from 1856 to approximately 1867 when cutting was done on a small scale on the eastern fringe of the Truckee Basin and was chiefly to supply wood to the Nevada Silver mines. The second period was from about 1868 through 1880, during which period the V-flume made accessible the more remote forest to the east and to the Central Pacific and the Virginia & Truckee Railroads. These railroads as they tapped the main body of Truckee Basin timber used much wood for maintenance and carried more away to supply the Comstock silver mines of Nevada and other mines in Arizona and Utah. The third period, from about 1880 to 1909 and the fourth from 1909 to 1936, coincided with growing markets created by other railroads, other mines and the building and fuel needs of a growing population over many parts of the west.

LOCALE OF STUDY

The Truckee River Basin is situated along the state lines of California and Nevada and encompasses parts of both states. The Truckee River rises in Lake Tahoe and flows north and eastward for some 90 miles, finally discharging into Pyramid Lake. Since this study deals mainly with the location, development and operation of lumbering concerns, the primary interest geographically is centered upon the upper 40 or 50 miles of the watershed in a region which is largely mountainous and timbered.

In reviewing the timber resources of the Truckee Basin an Early newspaper, the California Illustrated Times, wrote in the issue of December 25, 1877:

Throughout the forest forty miles of its course the Truckee River was originally shadowed by dense forest. Prior to the building of the Central Pacific Railroad 1863-1869 this vast timber belt remained untouched. Pioneers tell us that ...the...stately...pines and firs were clustered...into one grand sweeping forest from the crest of the Sierras to the very verge of the Nevada deserts¹³.

FIRST OPERATIONS IN THE AREA

In 1854 the first lumbering began on the eastern slope of the Sierras. Timber cutting had begun at Genoa, then known as Mormon Station, just outside the eastern limits of the Truckee Basin, when

¹³ The description "to the very verge of the Nevada deserts," would put the tree level at the 5,500 to 6,000 foot elevation for the Sierra Foothills west of Reno.

the Mormons settled it in 1850.¹⁴ Colonel John Reese, principal among the Mormon settlers, put up a sawmill there in 1854,¹⁵ was one of the first sawmills built in Utah Territory in which the present State of Nevada was then included.¹⁶ Excellent timber grew there, for Captain James Harvey Simpson, en route from Carson City to Genoa, records crossing Clear Creek on June 12, 1859, just before the Comstock discovery. His journal entry is:¹⁷

Crossed Clear Creek.... running from the Sierra Nevada into Carson River. Nearly all the streams from the Sierra Nevada are so copious as to be ample for mill purposes and the pines near(yellow and white or sugar) average probably 4 feet through and sometimes attain, Mr. Reese (a Nevadan), assures me, a diameter of 10 and a height of 150 feet.

In 1854 when the Reese Sawmill was built, another colony of some seventy Mormon families came to settle in western Nevada. Their leader, Elder Orson Hyde, chose a place in Washoe Valley which became Franktown. The site of the Franktown sawmill, a half mile west of Franktown, was just at the base of the Sierras where a small jutting ridge covered with luxuriant pine reached out along the foothills. Here, in the summer of 1855, Judge Hyde began the construction of the sawmill. In the following year he brought the mill machinery over the mountains from Placerville. It consisted of a two saw equipment, one circular saw and one upright saw and began sawing logs in early October 1856.

This mill, the first record in the Truckee Basin proper, had an unusual history: Elder Hyde was recalled to Salt Lake City a month after his mill had started to run. Before he went away he hurriedly disposed of his interest in Washoe Valley. He rented his \$10,000 mill to Jacob Rose, a former trader on the Carson River. At the time, as advance rent for the mill, Hyde received "one span of indifferent mules, an old worn out harness, two yokes of oxen and an old wagon", things he required for his trip back to

¹⁴ Angel, Myron, ed. 1881. History of Nevada...680 pages and illustrations. Oakland, California. See page 378.

¹⁵ Reese, John. Mormon Station. n.d. Unpublished memos. Copy on file Bancroft Library, University of California, Berkeley. According to the manuscripts by Eunice Miller, 1924 and by William M. Maule, 1938 indicate that the first sawmill in Nevada was erected by John Cary (and or Chase) at Mormon Station; Thomas Knott constructed a saw and grist mill nearby in the year 1853-1854.

¹⁶ The organic act creating the Territory of Nevada was signed by President Buchanan on March 2, 1861. Nevada Territory became Nevada State on October 31, 1864 by proclamation of President Lincoln.

¹⁷U.S. Engineer Dept. 1876...Report of explorations across the Great Basin of the Territory of Utah for a direct wagon-route from Camp Floyd to Genoa, in Carson valley, in 1859, by Captain J. H. Simpson...518 pages and illustrations. Washington, D.C. See page 92.

Salt Lake City. And he was never to receive more than these for rental of his mill. The subsequent Utah war and the creation of the Territory of Nevada clouded the titles of the abandoned Mormon property in the Carson country. In 1862 Hyde attempted to recover his sawmill, then valued at \$20,000 and in the possession of R. D. Sides. Because he received nothing but promises for the payment of the mill, he addressed an open letter on January 27, 1862, to the people of Carson and Washoe Valleys, giving them the choice of paying him \$20,000 or of being cursed with "earthquakes, floods, pestilence and famine". The curse, pronounced in 1862 was recalled by local residents in 1880¹⁸ when a dam broke and the consequent flood wiped out the very site of the old mill town below it and ruined Sides' farm; in 1882 another flood swept away the adjoining town of Ophir¹⁹.

The first sawmill on the California side of the Truckee Basin seems to have been that built in Lake Valley, El Dorado County, by William A. Hawthorne "shortly after his arrival in California in 1856". He ran the sawmill and also a shingle mill at a place called, in his honor, Hawthorne Station.

These two sawmills, the Franktown and Hawthorne, were the only ones in the Truckee Basin up to 1859. And this was not strange for the heart of the Basin was a remote, little known area; it had not even been explored by white men. It still exhibited the isolation credited to the region by Surveyor George Goddard in 1855 who, while checking the California-Nevada boundary south of Lake Tahoe, camped on the southern shore and looked over its surrounding forests. The entry in his diary reads²⁰:

September 19, [1855]: A fine view of the lake is obtained from this station. The lake is entirely closed in the mountains, and it is impossible to detect the opening by which the Truckee River flows from it. Indeed ...some have expressed a doubt as to whether the lake has

¹⁸ The date of this flood was February 2, 1881. See articles in Reno Evening Gazette - Tuesday, February 1, 1881, p. 3 c. 2 - The Threatened Flood, Franktown in Danger; The Little Valley Dam Expected To Give Way; Reno Evening Gazette - Thursday, February 3, 1881, p. 3 c. 2-3 - Franktown's Fate! Nearly All The Town Swept Away; By A Deluge From A Broken Reservoir.

¹⁹ Angel, Myron, ed. 1881. History of Nevada...680 pages and illustrations. Oakland, California. See pages 40-41.

Evidently the "curse" of flood is still with us one hundred years later; in the spring of 1986 a snow slide on Slide Mountain hit Upper Price's Lake like a bolt sending an eight foot wall of water over the dam at the upper lake and gouging like a plow into lower Price's Lake cascading mud, rock, trees and all hope for lower Price's Lake down the Canyon at a fantastic rate of speed, enveloping residences along old 395 and overlaying the site of Ophir and vicinity.

Fortunately the curse did not include "fire" or we would be attributing the August, 1981 devastation in the areas around Franktown, Carson City, and Mount Rose Highway to the good Elder.

²⁰Goddard, George. 1855. Report of a survey of a portion of the eastern boundary of California...186 pages n.p. See page 113.

an outlet at all... These mountains ought to be properly explored, as from their peculiar character for the great Pacific Railroad."

FIRST MAIN LOGGING PERIOD, 1859 THROUGH 1867: CUTTING ON THE EDGES OF THE TRUCKEE BASIN

GROWTH AND SPREAD OF MILLS TO SUPPLY THE DEMANDS OF COMSTOCK AND SETTLEMENTS

In 1859 occurred a development in Nevada which gave lumbering in the Truckee Basin an impetus that was sustained for twenty years - the discovery of the Comstock Lode. The lode, with Virginia City built above runs for about 4 miles along the eastern slope of Washoe Range at the foot of Mount Davidson. Then, as now, the Washoe Range was a rocky ridge carpeted with sage and patched in spots with scrubby pinons and juniper.

Almost from the time of its discovery the Lode was dependant on the Truckee Basin for mine timbers and also for fuel since no other fuel supply was available. For a short time the mines on the Lode relied for fuel on the limited wood growth nearby. But as the number of these ore mills rose to 76 by the close of 1861, according to the San Francisco Bulletin of December 4, 1861, the demand for fuel became so great that several hundred men were cutting and hauling wood from the nearest ravines to the lode. Wagons began to bring in loads of wood from Carson and Washoe Valleys. The Mining and Scientific Press of November 19, 1864 observed that every day chinese drivers goaded troops of donkeys over the steep slopes of the nearby Palmyra District and though El Dorado Canyon; at nightfall the little beasts were driven back to Virginia city, looking very comical, each with a burden of sticks weighing from 100 to 200 pounds piled high above his ears. During the summer months cedar was sold at from \$13 to \$18 per cord and pinon from \$16 to \$18, so the Gold Hill Daily News of October 20, 1863 reported; the same newspaper in its issue of November 14, 1863, stated that during the winter of 1863-64 the price of wood advanced to \$20 and \$30 per cord. By that time the neighboring ravines had been virtually stripped of all tree growth. Then came the Chinese wood peddlers who dug up the stumps left by early cutters, and as late as the severe winter 1866 and 1877, according to the Gold Hill Daily News of March 1 and 2, 1867, these orientals burrow under 6 feet of snow to dig out roots which they sold in Virginia City at the rate of \$60 per cord, a price indicative of the decreasing fuel supply near the silver lode.

But, urgent as was the demand for fuel, the want for timber was equally, if not more, pressing due to two increasing demands, those of the mines and those of the growing settlements. For in 1860 the silver mines had adopted a method of timbering which consumed immense quantities of sawn beams. This was known as the square set timbering system and was designed for the Ophir Mining Company by Philip Deidesheimer, mining engineer. This plan, designed to prevent cave-ins at the mines²¹.

²¹ Lord, Eliot. 1883. Comstock mining and miners. 451 pages and illustrations. Washington, D. C. (U.S. Geographical Survey Monograph IV) See page 90.

"was to frame timbers together in rectangular sets, each set being composed of a square base, placed horizontally, formed of four timbers, sills and cross pieces from four to six feet long, and surmounted at the corners by four post from 6 to 7 feet high, capped by a framework similar to the base. The cap pieces forming the top of any set were at the same time the sills or base of the next set above. These sets could readily be extended to any required height and over any given area, forming a series of horizontal floors, built up from the bottom sets like the successive stories of a house. The spaces between the timbers were filled with waste rock or wooden braces, forming a solid cube whenever the maximum degree of firmness was desired."

Construction of buildings in this hitherto sparsely populated region consumed vast quantities of lumber. The growth of several of the little settlements in the valleys toward the west almost kept pace with the rise of towns on the Lode and these were built chiefly of lumber. Within 18 months of the time the "Washoe" silver excitement broke out, more than 20 townsite were surveyed, reported the Mining and Scientific Press of March 3, 1877, so that during the early building boom, board cabins and business houses replaced the hovels and the canvas tents on Washoe's mountainsides - all at a price: The Sacramento Union of March 17, 1860, records that lumber cost \$100 per thousand; that during the next month, the price advanced to \$300 per thousand as teamsters were charging \$200 for hauling a load to Virginia City, 18 miles from the nearest Sawmill in Carson Valley.

This was the sawmill of 1859 on Mill Creek about 2.5 miles from Carson City. It stood on the edge of a 640 acre tract of "fine, large timber". Wrote historian Angel²²: "The transportation of heavy machinery over the Sierra at that early date was a very expensive undertaking, so that this was regarded as an enterprise quite extraordinary". This was the first steam driven plant built in the present limits of Nevada. It could cut 15,000 feet per day. Said the San Francisco Bulletin of April 23, 1960, "Were the capacity of the mill four times as great... it could not supply the demand."

Because it became very expensive to haul wood, fuel and lumber to the Lode from Carson and Washoe Valleys some mining operators solved the high cost of lumber by moving their ore mills to the woodlands of the Sierras foothills, chiefly those of Washoe Valley. The freight wagons hauling ore to these points carried back fuel wood and lumber to the mines on the Lode.

Typical and one of the largest of these mills was the Ophir Company which in April 1861 set in operation its ore reduction works near Washoe lake. This establishment stood on the edge of the Sierra timber 12 miles west of the Lode. The large reducing works, shops, stables, carriage house, quarters for workmen, superintendent's residence and offices covered an acre or more. Pasture lands, grain fields and vegetable garden surrounded the settlement and the Ophir Company's 2,000 acres of woodland spread

²² Angel, Myron, Ed. 1881. History of Nevada 680 pages and illustrations. Oakland, California. See page 541.

over the foothills nearby, according to a description in the San Francisco Bulletin of June 3, 1861 and October 24 and 30 1862. In cutting and hauling wood, preparing lumber at the sawmill, burning charcoal and other duties, nearly 100 men were constantly engaged, while a still greater number were employed in the reducing works. From property of the Ophir Mining Company ran a 75,000# bridge, more than a mile in length, which crossed the marsh above Washoe Lake. Shortening the distance from the reducing works to the lode. In 1863 a railroad was projected to run from Virginia City to Ophir with branches into the timber lands, but this was never constructed²³. In fact this company closed down after two or three years, "having outgrown their income" as the Mining and Scientific Press of February 24, 1877 put it.

EARLY LUMBER OPERATORS IN THE COUNTIES OF NEVADA(DOUGLAS, ORMSBY, WASHOE)

Thus inevitably during the sixties dozens of sawmills sprang up to met the ever increasing mining demands and building needs. They began to peck away at the Sierra foothills forest of Douglas, Ormsby, and Washoe Counties along Truckee Basin's eastern limits.

Douglas County, in 1861 had five sawmills turning out from 6,000 feet to 10,000 feet a day. Captain Pray built a plant at Glenbrook in 1861 and until 1863 the Pray Mill was known as the Lake Bigler Company, Lake Bigler being one early name for Lake Tahoe. The Company was composed of C. R. Barrett, N. D. Winters, and A. W. Pray, but during 1862, Pray bought out the interest of his partners and also purchased the possessory title of the original locators of Glenbrook - Warren, Murdock, and Walton. Connected with the mill were three tracts of timberland on the east side of Lake Tahoe where the timber was very large, planks five feet wide being very common." Another tract lay across the lake near Tahoe City. The mill at Glenbrook had two saws, one 60 and one 55 inches wide, with an edger and excellent lathing machinery, all driven by water which was conducted through a flume and ditch for more than a half mile. The mill turned out 20,000 feet of lumber daily besides a quantity of shingles. Shortly after it was constructed the Kings Canyon Toll Road was finished, giving the mill an outlet to the markets of Carson and the Comstock Lode.

In 1864 Captain Pray changed from water to steam power at a cost of \$20,000. In 1867 he was using a steam tug to raft immense logs across Lake Tahoe from the timber tract near Tahoe City. As demand for lumber was strong during the sixties he could readily dispose of his common lumber at \$25 a thousand and clear lumber \$45. So, under such favorable conditions, other mills followed the Pray plant. At the north end of Glenbrook J.H.F. Goff and George Morrill put up a mill which by 1875 became known as the Glenbrook Mill Company and in the later seventies became the property of Wells, Fargo & Company.

In May, 1866 Captain Pray together with J. H. F. Goff and R.

²³ Angel, Myron, ed. 1881. History of Nevada ... 680 pages and illustrations. Oakland, California. See page 643.

Also see the Eastern Slope - Saturday May 11, 1867, p. 2 c. 3, New Railroad Project; Nevada State Journal - Wednesday, October 18, 1876; Reno Evening Gazette - Friday, November 9, 1877, p. 2 c. 2; Reno Evening Gazette - Saturday, November 10, 1877, p. 3 c.1.

M. Clark incorporated as the Lake Tahoe & Empire Flume Company²⁴.

"By the following September they had completed a flume 14 miles long which ran from a point 1.5 miles east of the eastern shore of Lake Tahoe and about 1.25 miles west of the first summit. It terminated .75 miles of a mile from Empire. By means of this flume about 300 cords of wood could be landed at Empire every two hours."

South from Glenbrook some 8 or 9 miles at the foot of the Kingsberry (Kingsbury) Grade was the timberland of J. W. Haines, famous in the history of lumbermen of Nevada as he is generally regarded as the inventor of the V-flume. He was engaged in cutting timber on his tract in 1866 and in that year built a box flume a mile long to float his lumber. During the next 4 years he revamped the flume to the V type and extended it some 12 miles into the mountains of Kingsbury Canyon. In 1870 he obtained a patent as inventor of the V-flume, a mode of lumber transportation which revolutionized the lumber business throughout the Truckee Basin. It is not known when Haines first established his sawmill but, by 1876, his two saws, steam driven were turning out 8,000 a day.

George Schaffer who in the latter part of the sixties became an important lumber operator along the Truckee River in 1861 ran a shingle mill on Clear Creek in Douglas County. A sawmill directory of 1867 list this mill as a two saw, steam plant with a daily capacity of 8,000 feet, operated by "Schaffer & Company", indicating that Schaffer retained an interest in the mill, although records show that sometime in 1867 he built a sawmill at Truckee.

By 1863 George Elliott's Summit Mill was cutting in Clear Creek Canyon at a site about 2 miles below the Glenbrook Summit in Douglas County. His two saw plant turned out 8,000 feet a day until 1873.

In Ormsby County Alexander Ash (ASHE) built a water-driven plant on Mill Creek near the pioneer Gregory and Riddle Sawmill in 1860 and, although a flood in December 1961 swept the mill away, Ash rebuilt and continued operating until 1873 when he was turning out 20,000 feet a day.

One mile north of the Gregory & Riddle Mill, Thompson and Treadwell's Sawmill was cutting 15,000 feet daily in 1861. A shingle and planing mill were attached to this plant. During 1861 this mill, together with the Ash (ASHE) and Thompson and Treadwell's Mills were employing about 100 men.

During 1861 and 1862 Ormsby County had three mills in Clear Creek vicinity: The Coyote Sawmill, owned by George Chedic and D. S. Milne, and Haskell Mill, both propelled by water; the third was a steam driven mill owned by Jones & Denton. These mills, built at an aggregate cost of \$33,000, could cut 50,000 feet a day. Nearby in Kings Canyon, F. J. Hughes was running the Monitor Mill in 1863 and was cutting lumber for the mines at Gold Hill as late as 1866. The Carson Daily Appeal of June 21, 1866 observed: "the sawmill business on Clear Creek must be prospering. As many as 12 teams loaded with lumber passed through Carson City en route for Virginia City." For 1866 the Nevada Surveyor General reported that 2 million feet of lumber and 14,000 cords of fuel wood were cut from the timberlands of Ormsby County. He added further that at

²⁴ See Territorial Enterprise - Sunday, May 5, 1866.

that date a heavy growth of pine and fir, comprising about 20,000 acres, began at the base of the mountain range three miles west of Carson and extended on up to Lake Tahoe²⁵. In 1869 Ormsby County still had three sawmills of 40,000 feet daily capacity which were producing annually as much as in 1866.²⁶

Besides these seven sawmills, there were timber ranches in Ormsby County, four of them listed in the vicinity of Carson City and an early directory published in 1862.²⁷ But preceding these must be mentioned the most famous timber claim holder in the Truckee Basin, Mark Twain. In 1860 shortly after coming to Carson City with his brother, Orion, the recently appointed Secretary of Nevada Territory, Mark Twain and his partner, "Johnny K-----", located a 300 acre claim about 11 miles up from Carson City on the Ormsby County shore of Lake Tahoe. But Twain's carelessness with his camp fire soon caused his timber to go up in smoke. In "Roughing It" he tells how he made his camp fire, went off to get his fry pan and came back to find his pine forest in flames²⁸.

Washoe County was first in extent of timbered lands in Nevada. The first sawmill in this county and also the first in the Truckee Basin, as previously mentioned, was the one built by Mormon Elder Hyde at Franktown. Franktown remained a lumber center until the late sixties.

Other flourishing lumber centers of this decade in Washoe Valley²⁹ were Lakeview, Mill Station, Ophir, Washoe City, Galena and Brown's. By 1864, said the Virginia City Union of June 7, 1864, "Washoe City is the center of both agricultural and lumbering interests...Within a radius of ten miles are some twenty sawmills in constant operations, whose daily average product is 10,000 feet each." In his report for 1865 the Nevada Surveyor General pointed out the great activity in lumbering in Washoe County³⁰:

"How fast our beautiful pine forests are melting away before the...blows of the wood and lumberman. Many square miles of what was, only a few years ago, covered with a forest so heavy that it almost converted midday into twilight, are now stripped bare of trees and nothing but stumps...no business has had a greater success than lumbering, including the production of new timber,

²⁵Nevada Surveyor General. 1867 Annual report ...1866. 95 pages. Carson City, Nevada. See page 74.

²⁶Browne, John Ross. 1869. Resources of the Pacific Slope...678 pages. New York. See page 324.

²⁷Kelly, J. Wells, comp. 1862. Directory of Nevada Territory...264 pages. San Francisco. See page 67-92.

²⁸Clemens, Samuel Langhorne. 1899. Roughing It. 2 volumes. New York and London. See vol. 1 pages 189-190.

²⁹ It should be noted that at this time Washoe Valley was considered that area from Lakeview north of Carson to Steamboat Creek.

³⁰ Nevada Surveyor General. 1866. Annual report...1865. 83 pages. Carson City, Nevada. See pages 76-77.

logging and cordwood. The mountains are literally repeopled each year, those of last year having relaxed a small fortune (from lumbering) and taken their departure... There have been for the last two years from twelve to eighteen sawmills in this county constantly engaged in cutting timber...about thirty million feet per annum."

Washoe City's newspaper, the Eastern Slope, reported on August 31, 1867:

"Washoe City...ships monthly about one half the wood supplied by the valley, Ophir, Franktown, Mill Station and White's Canyon shipping the other half, amounting...to 6,000 cords per month. Many persons...place the estimate at 8,000 cords... This valley (Washoe) supplies the mines and mills on the Comstock monthly with 2,000,000 feet of timber and lumber and with 6,000 cords of fuel."

Some of the early sawmills around this valley were Thomas Norcross' Sawmill at Glendale, the Wallin Sawmill on Evans Creek, two mills in Thomas Canyon, the Eclipse Sawmill and Caldwell's which was a one-saw, steam plant with a daily capacity of 8,000 feet. In White's Canyon was the Loomis Mill; three miles (southwest) of Steamboat Springs a mill was running in 1860. Samuel McFarland, a leading lumberman on the Truckee River through 1867-1880, was also an early operator in Washoe County. He ran a mill just northwest of Lake City in 1862 and 1863; in 1867 he had a one-saw plant on Brown's Creek which cost \$10,000 and could turn out 10,000 feet a day. The mill of C. H. Eastman at a site four miles from Stone & Gates' Crossing³¹, now Glendale, was notable in that Eastman floated logs for some distance down the Truckee River. The San Francisco Bulletin of June 7, 1865 reported: "Richard Lent & Company recently cut 3,000,000 feet of pine logs, 6 miles below Lake Bigler, which were put into the Truckee River and driven 25 miles to Eastman & Company's mill." This mill ran until 1876.

On Galena Creek ran the sawmill of Acey Person, Built in 1860 at a cost of \$12,000 with a daily capacity of 26,000 feet; in 1863 it sold lumber at \$35 to \$45 per thousand. Thomas Norcross built a sawmill on Galena Creek in 1863. Alford's water-driven saw, with quartz mill attached, built in 1861, cost \$6,000 and cut 12,000 feet a day. Nearby Chapin's water driven mill, also built in 1861, employed "fifteen hands" and turned out 15,000 feet a day. Close to Chapin's on Galena Creek the \$20,000 saw and quartz mill of Stiltson (Stiltz), Ramsey & Company was run by water wheel 50 feet in diameter which drove the saw and twenty stamps; in 1862 it could crush 18 tons of rock and turn out 10,000 feet of lumber a day. A half mile south of the town of Galena the Union Sawmill in 1862 sold lumber at \$35 to \$50 per thousand.

Near Washoe City ran the Hymer's Sawmill from 1860 to 1868, the Forest Mill, from 1862 to 1863 and the Musgrove Mill in 1863.

³¹ Stone & Gates Crossing was located east of the Boynton Sough and at the mouth of the canyon. The original site was obliterated during the construction of the Reno-Sparks Waste Water Treatment Site.

The Central Mill on the west side of Washoe Valley was built in 1861 at Little Bangor, a mile south of Franktown by Gilman N. Folsom, Charles A. Bragg and Albert Bragg, known as Folsom & Bragg Company. This mill operated until 1870 when Folsom and Charles A. Bragg bought the Pacific Wood & Lumber Company³² at Camp 18 (Clinton, California) on the Truckee River. Near Washoe City J. R. Knox operated a water-driven sawmill from 1864 until 1867; the Eagle Mill above Washoe City in 1867 supplied mining timbers to the Yellow Jacket Company on the Comstock.

In Ophir Vicinity the sawmills of Judge Watson and Negus and Lonkey began cutting in 1862. Franktown claimed the first steam sawmill in Washoe County - the plant belonging to Ross Lewers, who had moved his sawmill from Lassen County to a site about 2 miles south of Franktown in the Spring of 1860 on account of the silver discovery. The Stockman Sawmill, a mile from Franktown, operated in 1863.

During 1862 and 1863 two "wood ranches" were cutting timber near Washoe; another near Steamboat Springs; one, in Newton Canyon; one, near Elk Horn Mill and one on Evans Creek.

PEAK OUTPUTS OF DOUGLAS, ORMSBY AND WASHOE COUNTIES FROM 1859 THROUGH 1867

It is certain that there was a large unrecorded timber cutting in the Nevada Counties within the Truckee Basin but the actual amounts can only be roughly estimated. The scant records available can only suggest the lumber and wood production in these counties during a part of the period 1859 through 1867.

Washoe County, most heavily timbered, produced:

2 million feet weekly during 1862³³ and 1863³⁴
30 million feet annually during 1864 and 1865³⁵
1,300,000 feet monthly during 1866³⁶
2 million feet monthly during 1867³⁷

Douglas County, second in timbered area, produced:

³² This is not to be confused with the Mackay and Fair operation called the Pacific Wood Lumber and Flume Company which was working the upper elevations around Hunter Lake.

³³Kelly, J. Wells, comp. 1862.....Directory of Nevada Territory...264 pp. San Francisco. See page 99.

³⁴Kelly, J. Wells, comp. 1863....Directory of Nevada Territory... 482 pp. San Francisco. See p. 130.

³⁵Nevada Surveyor General (1866). Annual report ... 1865. 83 pp. (Carson City, Nevada). See page 77.

³⁶Angel, Myron, ed. 1881. History of Nevada ... 680 pp., illus. Oakland, California. See p. 626.

³⁷Washoe City Eastern Slope (Washoe City, Nevada), August 31, 1867. See page 2 col. 2.

6,000 to 10,000 feet daily during 1862³⁸

Ormsby County produced:

2 million feet annually during 1866³⁹
14,000 cords of wood during 1866⁴⁰

But these mills of the early sixties, even running at full capacity, could not supply the growing demands of the mines for the large timbers necessary for the Deidesheimer square set system. Even building logging roads farther up into the timber and employing scores of ox teams to drag the logs within reach of the their mill ponds, it was impossible for lumber operators, with the equipment they had, to fill the timber needs of the mines.

Nearly every variety of tree was used either for timber, lumber or cordwood. The following represents the most common species of trees used to support the timber, lumber and cordwood businesses: Yellow Pine (Ponderosa), Jeffrey Pine, White Fir, Silver Fir, California Red Fir, Incense Cedar, Western White Pine, White Bark Pine, Lodgepole Pine (Tamarack), Sugar Pine, Limber Pine, Washoe Pine⁴¹, Black Hemlock, Western Juniper (Pinon), Alder, Aspen and Mahogany.

DEVELOPMENT OF THE V-FLUME

So box flumes began to supplant the logging road and this improvement was soon followed by the more economical and practical V-flume, a device which had been developing since 1864 and which revolutionized the transportation of the lumber in this region.

In the beginning of 1869 J. W. Haines who had engaged in timber cutting on his land at the foot of the Kingsbury Grade since 1866, applied for a patent to the V-flume. Although he is regarded by many as the inventor of this type of flume, that transportation aid was apparently evolved from the experience of many lumber operators. This was proved when, in August 1872, J. W. Haines brought suit at Carson City in the U.S. District Court against William Sharon, a director of the Virginia and Truckee Railroad, and others to determine his right to benefits as an inventor of the V-flume. Testimony of several witnesses revealed that the V-flume had already been in use in Nevada for some 8 years: J. R. Knox testified that he had a V-flume in Musgrove Canyon in 1864; Oliver Lonkey built a 2 1/2 mile V-flume in 1864 from Little Valley to Franktown at a cost of about \$2,000 per mile; Charles Gillis of

³⁸Kelly, J. Wells, comp. 1862. ...Directory of Nevada Territory ... 264 pp. San Francisco. See p. 50.

³⁹Nevada Surveyor General. 1867. Annual report ... 1866. 95 pp. Carson City, Nevada. See page 74.

⁴⁰Nevada Surveyor General. 1867 Annual report ... 1866. 95 pp. Carson City, Nevada. See page 74.

⁴¹ The Washoe Pine, Pinus Washoenis, was discovered in 1938 on Mount Rose, Nevada. It was named in 1945 in honor of the Washoe Indians who once hunted in the area.

Genoa stated that in 1866 he tried out a lap over V-flume in Kingsbury Canyon which proved so successful that during the next 4 years he revamped it to the true V-type and extended it some 12 miles into the mountains. Another witness stated that he knew of a V-flume in Simmon's Canyon in 1868 which was built by A. C. Cleveland⁴². This litigation emphasizes the value of the V-flume to the lumberman. It made remote forests accessible while doing away with slow and expensive freighting of wood over costly mountain roads.

An excellent description of the V-flume was written by Eliot Lord, who in 1883 published a monograph, entitled Comstock Mining and Miners for the United States Geological Survey⁴³:

"To form this [V] flume rough planks 1-1/2 inches thick, 24 inches in breadth, and 16 feet long, were joined at an angle of 90 degrees, and the trough thus made was lengthened by the junction of similar sections with overlapping ends. The flume was laid on the ground with simple wooden props, and supported by trestle-work when ravines were crossed. During the following year (1866) the sections were made to abut instead of lapping over.... Sawmills were erected at suitable points in the mountains, and the timbers were then borne down to the valleys, like firewood, from the summit of the Sierras. At first the descent of the flume line was only 1-1/2 inches to the rod, and in order to maintain this grade they wound about hills, skirted the edge of precipices, and crossed deep canyons on lofty trestles. Timbers and wood glided down the current, at short intervals, in a long procession, without crowding or jamming against one another, until they were thrown forth at length from the end of the flume upon the dump in the valley. But when reservoirs stored the mountain drainage and with creek and lakes supplied strong flowing streams, then the grade of the flumes was raised in places to an elevation of four feet to the rod and the water fall was a sheet of foam. Massive timbers thirty-two feet long were hurled down these rapids like arrows from a bow, while the flume trembled with their motion and the water was banked up before them in white curling mounds like breaking surf."

And so by means of the V-flume thousands of acres of timberland, inaccessible before were now utilized from the foothills to the Sierra Summit.

EARLY LUMBER OPERATORS IN THE COUNTIES OF CALIFORNIA (SIERRA, NEVADA, PLACER AND EL DORADO)

Before 1866 very little lumber was cut on the California side of the Truckee Basin. In the northern-most of these counties,

⁴²Angel, Myron, ed. 1881. History of Nevada ... 680 pp., illus. Oakland, California. See pages 189-191.

⁴³Lord, Eliot. 1883. Comstock mining and miners. 451 pp., illus. Washington, D.C. (U.S. Geological Survey Monograph IV) See page 257.

Sierra, the Boston Mill and the original Dog Valley Mill were operating in 1860 at the head of Dog Valley. Two small mills, one belonging to John Snodgrass and one to Ben Leavitt, were cutting on the Dog Valley Summit during the same year. By 1863 the east part of Sierra County lying within the Truckee Basin was carrying on a substantial trade with the Territory of Nevada. As one newspaper of October 17, 1863, in commenting on Sierra County, expressed it⁴⁴: "One is seized with wonder and admiration in beholding the almost unbroken chain of teams that daily file eastward, laden with hay and lumber for silverland." Another of the early mills of Sierra County was John Dixon's Yuba Mill, a one-saw, water-driven plant which ran from 1862 until 1879, cutting about 10,000 feet a day from 1867 through 1878. The slopes of Crystal Peak also bore an extensive tract of timberland and for this reason the Crystal Peak Company in 1864 established a town on the site. The company owned lumbering and mining interests some 10 or 15 miles west⁴⁵. By July 1864 there were four sawmills operating in that vicinity. Less than a year later, in May 1865, six sawmills "capable of providing, each, 1,000 feet of dressed lumber per hour" were running⁴⁶. One of these was the Excelsior Mill operated by Goshen & Sproul⁴⁷ and four were the mills of Daniel Proctor who furnished lumber to the Central Pacific Railroad until 1868.

In Nevada County the only sawmill operating before 1867 was that at the foot of Donner Lake, owned by one McPherson and described as "a little sawmill run by an improvised water wheel".

There was in Placer County during the early sixties a shingle mill in Ski Canyon. The Forest Hill Courier of July 25, 1863 reported a sawmill put up in Squaw Valley incident to a short-lived mining boom, when Knoxville and Claraville arose. On the shore of Lake Tahoe about a mile north of Ward Creek stood the two-saw, steam plant of Reuben E. Saxton, cutting 8,000 feet daily from 1863 to 1872. This mill operated until 1882.

In El Dorado County only two mills were running in the early sixties, both using up-and-down saws: One was located a mile east of Sierra House; the other, one mile west, was owned by Robert Woodburn and cut timber until 1888.

DECLINE OF LUMBERING ON THE NEVADA SIDE DUE TO SLUMP IN COMSTOCK ORE PRODUCTION.

Throughout the first half of the sixties, the sawmills in the Nevada counties of the Truckee Basin had been cutting to meet two demands: in part, to supply the growing settlements and, more important, to furnish enormous quantities of wood and lumber to the Comstock silver lode. The year 1864 marked the first production

⁴⁴Bancroft Scraps, a collection of newspaper clippings in 113 v. in Bancroft Library, University of California, Berkeley. See 5:1782.

⁴⁵ Angel, Myron, ed. 1881. History of Nevada ... 680 pp. Oakland, California. See page 641.

⁴⁶Gold Hill Daily News (Gold Hill, Nevada), May 11, 1865. See page 3 col. 1.

⁴⁷ From information supplied directly to R.C. Wilson by George Smith, Verdi, Nevada.

peak of the silver mines, \$16,000,000; this decreased consistently at the rate of about \$1,000,000 yearly until 1868 when the bullion production for that year dropped to less than \$8,000,000⁴⁸. And as the silver mines were the chief consumers of wood and timber from the eastern slopes of the Truckee Basin until the close of 1867, the demand for wood and lumber fell with diminishing silver production.

SECOND MAIN LOGGING PERIOD, 1868 THROUGH 1880: CUTTING IN THE HEART OF THE TRUCKEE BASIN

CALIFORNIA REGION

But the decline in the demand for lumber on the Nevada side of the Basin coincided on the California side with the beginning of an era of expansion in lumbering operations never experienced before or since along the Truckee River. And this development was the result of the building of the Central Pacific Railroad.

DEVELOPMENT OF LUMBERING INFLUENCED BY BUILDING OF THE CENTRAL PACIFIC RAILROAD

Extensive lumbering along the Truckee River in the heart of the Truckee Basin dates from the winter of 1866 and 1867 when tracks of the Central Pacific reached the Sierra Nevada Summit on the western edge of the Truckee Basin. The Central Pacific had been granted the right to cut and use the timber on government land as well as that on the sections of land given it as a subsidy for construction, according to the San Francisco Bulletin of February 27, 1878. And as men cleared off the timber on the railroad right-of-way, felling trees 4, 6, and sometimes 8 feet through, they had reason to recall the words of Chief Engineer Theodore Judah who, in 1862, made the preliminary survey of this region for the railroad: "the sugar pine of these lands often runs 125 feet high without a limb, and often measures 8 feet through at base"⁴⁹. The California Illustrated Times of December 25, 1877 declared that when surveyors blazed out the route for the location of the Central Pacific:

"They selected a course through the very heart of the Truckee timber belt. Had they sought for the richest forests instead of the easiest grades, their routes would have varied but little from the one actually chosen. The countless thousands of ties used in constructing the great national thoroughfare, the timbers for bridges and trestles and tunnels and depots, and the almost unlimited quantities of material (300 million feet for construction, 20 million feet annually for rebuilding

⁴⁸Nevada State Bureau of Mines. 1923. Bulletin 1923. 295 pp. Reno, Nevada. See page 226.

⁴⁹(Judah, Theodore Dehone). 1862. Report of the chief engineer on the preliminary survey ... of the Central Pacific Railroad ... across the Sierra Nevada Mountains from Sacramento to the eastern boundary of California... 56 pp., illus. Truckee, California. See page 47.

sheds and keeping the road in repair, according to the San Francisco Call of March 27, 1878) employed in constructing the 35 miles of snow sheds were mainly supplied from Truckee fir, pine and tamarack. Add to this the amount of timber and lumber used in repairing and improving the road after its completion, add the thousands of cords of wood consumed in Central Pacific locomotives, the 70 million feet annually supplied to the silver mines of Nevada, the lumber which built Truckee, Reno, Wadsworth and the stations to the eastward; swell the aggregate by the lumber trade of Utah, southern Idaho and northern Nevada, which could not be obtained elsewhere, and you have a faint outline of the lumber business of the Truckee Basin during the past ten years [from 1868 to 1877] ...

In 1868 when the rivalry between the Central and Union Pacific managers was at its height, Truckee saw its palmiest days. Fifty car loads of railroad ties alone were shipped daily from the town during the summer. In the aggregate, 66,000,000 feet of timber were cut and shipped from the immediate vicinity of Truckee. Brickell & Geisendorfer at Coburn Station cut 8 million feet; Schaffer & Gray, 5 million feet; Elle Ellen, 3 million feet; A. P. Stanford, 6 million; the two Proctor Mills, 8 million; Geisendorfer, 3 million; the Stonewall Mill, 3 million; Starbuck, Miller & Heaton, 5 million; T. R. Jones (two mills), 16 million; Rideout & Company, 4 million.... From careful estimates of the quantities of lumber cut by each of the Truckee Mills since 1867, it is ascertained that up to 1877, 376 million feet have been manufactured.

LEADING OPERATORS, 1868 THROUGH 1880

Due to the moderate rates granted by the Central Pacific Railroad to the lumbermen of the Truckee River region, this area could compete with the eastern trade as far as Denver. Records show that some 56 operators were cutting in the Truckee Basin at some time during this peak decade and a description of the operations of several of them affords a composite picture of timber cutting in the Truckee River country during these years of enormous lumber production.

George Schaffer became prominent in Truckee history while he was operating his shingle mill on Clear Creek: In 1864 he came over to Truckee which until August 1867 was called Coburn's Station and was just a watering and feed station on Dutch Flat wagon route from Sacramento to Virginia City. In that year the surveying corps of the Central Pacific came to Truckee, completing a wagon road of 21 miles from Cisco to Coburn's over which to bring in supplies for building the railroad. George Schaffer got the contract to bring in over this road the first locomotive, "San Mateo". After getting it in piecemeal on sleighs, he assembled it on the eastern end of

what is now known as the Plaza⁵⁰.

Schaffer & Gray built a sawmill just across the Truckee River south of the town of Truckee in 1867, said to have been the first sawmill on the river. In 1868 when the Central Pacific was coming through the Truckee country, Schaffer & Gray furnished many of its ties, telegraph poles and snow shed timbers; their cut for 1868 was 5 million feet. No records concerning this partnership for the years 1869 to 1870 have been found, but it is probable that it continued until 1871, when it was dissolved and Schaffer & Gray each launched a business of his own.

George Schaffer, in 1871, moved to a site 3 miles from Truckee in Martis Valley. His mill, with a capacity of 35,000 feet a day, cutting in the heavily wooded rim of the Tahoe Basin beside it, was able to manufacture 50 million feet of lumber from 1871 to 1877. His principal markets until 1880 were Nevada and Utah.

Joseph Gray began running a sawmill at Camp 20 in 1872 and continued in the lumbering business there until 1880. His mill had a daily capacity of 30,000 feet.

Samuel McFarland established a two-saw, steam sawmill in 1867 on the Truckee River just above the mouth of the Little Truckee. This plant had a daily capacity of 20,000 feet. In June 1872 he began sawing at a new site at the south fork of Martis Creek about 4 miles out of Truckee. The country around this mill was well timbered and McFarland had excellent facilities for transporting his lumber as the flume of Sisson, Wallace & Company⁵¹ was extended toward his mill enabling him to haul his lumber to the head of the flume and float it down to the Central Pacific Railroad. This was a three-saw, steam mill and it continued sawing until 1880 at daily rates varying from 15,000 feet to 25,000 feet.

The Truckee Lumber Company was established in March 1867 when the Central Pacific Railroad was just crossing the summit into the western edge of the Truckee Basin. E.J. Brickell and George Geisendorfer, the founders of the company, built a water-power sawmill at Coburn's Station, which by August of that year became known as Truckee. They built the mill to supply lumber to the Central Pacific and in their first year of operation they filled a contract for 10,000 ties and 2 million feet of bridge timbers and their output for the year (1868) was 8 million feet. Within 3 years they had spent \$150,000 in improving the plant so that in 1871 and 1872 their 4 saws were cutting at the rate of 50,000 feet every 12 hours. In 1873 W. H. Kruger bought a half interest in the company, thus renewing a partnership with Mr. Brickell which had begun at Dutch Flat (California) in 1865 when the two ran a steam mill there.

Brickell & Kruger now purchased some 400 acres, a tract which included practically all the upper part of the town of Truckee where the sawmill and factory stood and it extended some distance across the Truckee River. They further increased their timber holdings by adding about 7,000 acres which lay along the Truckee

⁵⁰Edwards, W. F. 1883. W. F. Edwards' Tourists' guide and directory of the Truckee Basin. 137 pp., illus. Truckee, California. See pages 13-14.

⁵¹Sisson was also a purveyor from Sacramento and San Francisco. Bills and correspondence from Nevada Collection NC 999. Special Collections Department - Getchell Library - University of Nevada.

River toward Lake Tahoe, the outlying portions of which were only about 9 miles from the mills at Truckee. Their doubler mill had a capacity of 75,000 feet a day. Their sash, door and blind factory used some 4 million feet of lumber annually. Much of their output found a steady market in Nevada and Utah to the extent of from 4 million to 8 million feet annually.

Their logging methods were very interesting. Logs from their timberland lying between Truckee and Lake Tahoe along either side of the Truckee River were chuted down from the high plateaus of the Truckee Canyon at the rate of "a mile a minute" below to the river edge. And as the timber nearest the canyon edge was cut off it became a problem to get the logs to the chutes, but a solution was found in the narrow gauge railroad. The railroad was 1-1/2 miles long and carried as much as 10,000 feet of logs to the load. The cars are let down by brakes and brought back with horses. This method, however, was not satisfactory as the brakes would not hold the loaded cars in places where the land sloped too much, whereupon the Truckee Lumber Company began to use chutes in which logs were drawn by horses.

An ordinary chute was composed of two parallel logs, slightly imbedded in the ground and having a grade of from 25 to 45 degrees so that logs descended by gravity. The Truckee Company extended the ordinary chutes work as far and as high as any grade could be obtained and had horses draw the logs through them.

Instead of expending \$4,000 to build a mile of narrow gauge railroad in order to get the logs to the top of the steep chutes, these horse-chutes are laid down at a cost of construction not exceeding \$300 per mile. Four men and four oxen can lay a quarter of a mile in a day. Timbers for saw logs are cut from trees 18 inches in diameter and upward. Timbers for chutes are cut from trees averaging from 12 to 14 inches in diameter and are about 40 feet long. At the small end they are frequently not over 10 inches. Laid parallel, about 6 inches apart, the small ends notched into the butts of the next sticks, the inside faces being hewn smooth and greased with tallow, the horse-chute is complete. A boy with a pail of warm tallow and a swab greases them twice a day. Switches are formed by notching one log of the chute and inserting one end of a smaller timber, thus forming a sort of inclined plane up which the sawn logs are drawn.

The chute is so cheap that branches can be extended in any direction into the forests. There is no lifting of logs, no loading on trucks or cars, no time lost in getting the logs ready to move.... The teams bring the logs into the chutes and four horses, hitched tandem, draw them down to the bluff. The driver rides the last or wheel horse. A hook is struck into the hind end of a log which has three or four other logs in front of it and the horses are hitched to the hook.... The saw logs are peeled of their bark, the chute is greased, the grade is descending and the horses, driven by a check line, have to go at a lively trot to keep up. Three four-horse teams take the logs to the bluff, a distance of a mile, as fast as four ox-teams can snake them to the chutes. It is exceedingly lively work... The great forest kings

are crashing in every direction, the teamsters hallooming at the oxen, the axes and saws mingle their respective voices, the logs grind against each other, or the sides of the chute grate harshly along the logway, and finally take a half-mile plunge into the river with a boom like distant artillery. Sugar pine logs 5 feet in diameter, from 12 to 16 feet long, weighing at least 10 tons, are drawn down the horse-chute at a lively trot, the hook is loosened without stopping and, plunging over the tip of the bluff, they go down the half-mile to the river like a streak of lightning.

In 1877 when all the sawmills around Truckee ran at full capacity, the Truckee Lumber Company operated eight chutes. The reservoir was 3 miles up the river from the mill and the large heads of water which every day swept down the channel from the dams of the Donner Boom & Lumber Company carried the logs down the river like shingle blocks.

During the brisk lumbering period from 1868 through 1880, the Truckee Lumber Company hired as many as 125 men. They owned teams and stables. They managed their own camps. Said the Truckee Republican publisher: "This company has the most perfect and systematic, the simplest and most economical methods of logging, considering distance, ground and everything, that can be found in the Sierra Nevadas." Toward the close of the 1878 season the company had cut only about one-half of their 6,320 acres which lay between Truckee and Lake Tahoe.

Charles Allen Bragg and Gilman N. Folsom, after operating the Central Mill in western Washoe Valley from 1862 until 1870 with brother Albert Bragg, bought from Thomas R. Jones the steam mill which he had built in 1868 at Camp 18 (also known as Clinton, California). This plant became the Pacific Wood & Lumber Company under the new ownership and was said to be one of the finest mills on the Truckee River⁵². In its first ten years, from 1868 until 1878, it produced about 45,000 feet a day. During this period Folsom & Bragg obtained their logs, by means of river drives, through the channels of Prosser Creek, the Little Truckee and the main Truckee River⁵³. They owned 2,920 acres. In September 1878

⁵² See Territorial Enterprise - Wednesday, March 19, 1879, p. 2 c. 4 for description of Folsom & Bragg Mill operation at Clinton.

⁵³ "Lumber was more important than all the Nevada ranches," was the attitude responding to the complaints of Nevada ranchers regarding logs, limbs, bark, and sawdust plugging irrigation ditches. The log chutes described in the Territorial Enterprise of October 26, 1878 and the recognition of the sawdust interfering with the ice harvest from the Truckee Republican of December 19, 1872 to say nothing of reports that the huge quantities of sawdust impeding the salmon spawn at Pyramid Lake indicate that pollution problems were acknowledged by some. There are claims that trout spawned in the gravel of the drainage canal of Washoe Lake (now known as the Boynton Slough) as late as 1926. Quite certainly this would indicate that waste treatment from Truckee to Wadsworth and other problems had more of an effect on the fisheries of the Truckee River than logging.

they began operating the first logging steam railroad⁵⁴ in the Truckee River country. This extended 4 miles from the bluff overlooking Clinton and ran along Juniper Creek through a thick forest of pine and fir. Fred Burkhalter, superintendent of the company, was the originator of the narrow-gauge railroad⁵⁵. Due to his foresight, steam was used to perform the work formerly done by animals; logs were brought by the train to the top of the bluff overlooking the mill and were chuted to the millpond below in 20 or 30 seconds, according to the size of the log. In September 1879 Folsom & Bragg's sawmill burned down but they were able to save their yards⁵⁶.

Elle Ellen⁵⁷ was one of the oldest lumbermen in California, having run a sawmill in El Dorado County at Ringgold in 1852, 14 years before he came to Truckee. His was the third sawmill on the Truckee River and was built in 1868 in the northern end of Truckee. It cut about 3 million feet of lumber annually until the fall of 1877 when nearly all other timber within reach of his mill had been cleared off. By December 1877 he had put up a new mill with a daily capacity of 40,000 feet 3 miles from Truckee up Trout Creek. This was connected with the side tracks of the Central Pacific Railroad at Truckee by a V-flume. Dense forests of yellow pine and red and white fir on Mr. Ellen's some 3,200 acres surrounded quite a village - Mr. Ellen's residence, the dwellings of his employees and the boarding house near the mill.

In 1874 Warren⁵⁸ and George W. Richardson moved the machinery from their mill at Summit Valley, on the western Sierra watershed, southwest of Donner Pass, over the Sierras and installed it in

⁵⁴ Railroads of Nevada by Myrick, page 438 - The railroad was called the Clinton Narrow Gauge Railroad, original cost was \$40,000 placed in operation on September 1, 1878, it was claimed to be the first steam logging railroad along the Truckee River.

⁵⁵ Territorial Enterprise - Wednesday, March 19, 1874, p. 2 c. 4.

⁵⁶ See Reno Evening Gazette - September 4, 1879 for description of the fire at the Folsom & Bragg Works at Clinton.

⁵⁷ The vastness of his operation is demonstrated by the output for his mill during 1872. Mr. Ellen shipped on average 25 car loads of lumber each week, about 175,000 feet. He could have shipped more, but for the scarcity of railroad cars. At any one time he had 500,000 feet of lumber on his siding at Truckee. He direct shipped lumber to Virginia City, Palisade, Eureka, Ogden, and Salt Lake. In addition Mr. Ellen had a planing, lath and shingle mill; the planing mill preparing for market about 75,000 feet of lumber per week. Two shingle machines turn out an average of 200,000 shingles and 50,000 laths. Staff of 40 mill-hands run the mill. In addition he was a lumber broker, buying and selling to accommodate small specialty mills. Truckee Republican - Saturday, August 17, 1872.

⁵⁸ Warren Richardson's son, Warren, was a principal with Forrest Lovelock in the Ford Agency in Reno for many years before selling out to Fred Bartlett and later to Dick West of Jones-West Ford.

their new steam mill in upper Martis Valley, a mile east of Schaffer's Mill. The foundation of the mill was laid in May and their whole plant completed and in running order within 40 days after the work commenced. The motive power was a 60-horse-power engine which ran one main circular saw at the rate of 50,000 feet every 12 hours. The mill, built on the middle fork of Martis Creek about a mile and a half from Martis Valley proper was accessible to several thousand acres of the "choicest sawing timber ... found on this side of the Sierras." Five months from the time the mill began operating it had sawed 1,200,000 feet of lumber which was piled ready for shipment through the flume to the Richardson Lumber yards at Martis Creek Station on the line of the Central Pacific Railroad at the mouth of Martis Creek. The Richardson flume was one and a half miles long and connected with the Sisson & Wallace flume in Martis Valley, making the entire distance through both flumes to the Martis Creek lumber yard about 5 1/2 miles. In the flume construction the utmost economy was used: each section, 16 feet long, was made at the mill and floated down to the end where it was seized and placed in position by the workmen. In this way the cost was considerably cut by eliminating the use of teams for hauling lumber and material. The flume was completed within ten days after it was begun. It was navigable for all kinds of lumber.

By mid-September of 1874 the Richardson plant represented an outlay of about \$25,000. They employed thirty-five men at their mill and in logging operations. At first they logged with five teams of oxen but very early in the seventies they originated a unique method for getting logs from the forest to their mill. They built tracks of pine logs of 10 or 12-inch diameter and lightly imbedded them in the ground. Over these they ran a logging locomotive the line of which was never before seen in the Truckee Basin. To paraphrase the description given by the publisher of the Truckee Republican: "It stood immense and powerful like something out of the land of giants. Its three zinc-covered cylinders and its heavy flanged wheels rolled ponderously over the log tramway, pushing or pulling tremendous carloads of huge logs from the forest to the saws of the mill. Fed by refuse of the mill, it cost nothing for fuel, and track repairs were slight. In the summer of 1876 the Richardsons began to operate their new planing mill at Martis Creek Station, a planer of "latest design", driven by an overshot water wheel of 20-horse-power. They continued to operate their sawmill in Martis Valley at the rate of about 40,000 feet a day until the end of the 1870's. By the 1886 logging season their railroad was projected to be nearly 10 miles long. Two years later when their mill at Clinton burned again the railroad was further extended. The safety of this railroad was exceptional. By 1892 the railroad stretched to within three miles of Hot Springs (Brockway) at Lake Tahoe. Two locomotives and ten flat cars were required to keep the mill supplied while a total of 150 men were recruited to keep the operations going. In 1901 the line was abandoned⁵⁹. Their chief markets were Nevada and Utah."

The Stanford Mill, 4 miles southwest of Truckee was built by A. P. Stanford on Coldstream Creek in 1868. Stanford's successor, John Kneeland, manufactured quantities of lumber at this plant for the Central Pacific until 1882. The mill had a daily capacity of 30,000 feet.

⁵⁹ Railroads Of Nevada - Myrick. Page 437.

The three Towle Brothers who, since 1859, had cut timber for their four sawmills west of the Sierra summit came over to Donner Lake when the Central Pacific first entered the Truckee Basin in 1867. On the north(south) shore of the lake near the railroad they built a steam plant with four saws and a daily capacity of 100,000 feet. They ran this mill until 1871. Charles Roberson and James Machomick built the Alder Creek Mill on Alder Creek in 1871. It was operated by three steam engines, had two circular saws and one edger, as well as a planing mill and shingle machine. Its capacity was 40,000 feet every 12 hours. The owners estimated that the timber tract accessible to the mill would yield about 20 million feet. In the second summer of operations they constructed a 5-mile V-flume from a point near the mill to the tracks of the Central Pacific near the mouth of Prosser Creek, "one of the most substantial flumes in this region". Through this flume 100,000 feet of lumber or 500 cords of wood could be floated every 12 hours; it could also deliver timbers, ties, and shingles. During the years from 1871 to 1883 while they ran the Alder Creek Mill they cut from 40,000 to 60,000 feet of lumber a day. In 1883 Elle Ellen bought this mill property, including the mill site on Alder Creek, the V-flume and several sections of timberland.

In Placer County at Squaw Valley on the Truckee River, some 7 miles above Truckee, Caspar Schock operated a busy shingle mill, run by water power. From 1875 until 1880 he supplied the market with a excellent quality of shingles from his 80-acre tract of heavy timber.

On Prosser Creek about 6 miles from Truckee Oliver Lonkey and E. R. Smith established the Nevada & California Lumber Company in 1873. The waters of Prosser Creek furnished power to run the mill which could manufacture 30,000 feet a day. A Leffel turbine wheel 10 inches across turned by a pressure of 150-foot head of water supplied the motive power and after the water had passed through the turbine it was used to flow through a V-flume 5 1/2 miles long. Into this flume the lumber was dumped as soon as it left the saw and was floated to the company's yards at Prosser Creek Station on the Central Pacific Railroad. Lonkey & Smith had a lumber yard at Virginia City, also, and from 1874 they were the owners of the Verdi Factory & Planing Mill at Verdi, Nevada. In 1878 they ran a sash, door and blind and a box factory at Camp 16. Their tract of 1,760 acres along Prosser Creek supplied these factories and the two yards throughout the seventies at the rate of about 6 million feet each year. From the spring of 1876 Lonkey & Smith used considerable amounts of lumber cut at the new plant of the Crystal Peak Lumber Company which was located 5 miles from Verdi in Dog Valley.

The Pacific Shingle Company at Camp 16, 7 miles below Truckee on the Truckee River, was owned by Horace Hale, Jesse Thompson and R. P. Ferguson. They began operating this very complete water-power shingle mill in June 1874 at the rate of 85,000 shingles every 24 hours. Shingle blocks were floated to their mill down the Truckee River and down Prosser Creek. During the 1876 season they made and sold more than 15 million shingles, almost all their annual output going to Nevada and Utah markets. Until the fall of 1882, when the factory burned, their output ranged from 5 million to 10 million shingles a year.

From a small sawmill built in 1866 at Boca by James Akin, L. E. Doan and D. D. Whitbeck, for the purpose of supplying the Central Pacific Railroad with lumber and timbers, developed one of

the largest factories on the Truckee River. This plant, the Boca Mill Company, stood at the junction of the Little Truckee and the main Truckee Rivers, and, as their timber supply lay along the Little Truckee, the company expended many thousands of dollars in widening and deepening the channel of this stream in order to make it adequate for river driving. In 1871 the Little Truckee ran through a continuous belt of timber from its sources in Weber and Independence Lakes to its outlet at Boca, a distance of 30 miles. Log chutes precipitated logs into the river and the timber was floated down stream to the mill at Boca and to facilitate the work of river driving, dams were built at the outlets of both Weber and Independence Lakes so that it was only necessary to lift the gates in order to insure sufficient heads of water.

The Boca Mill Company in 1872 turned out 60,000 feet of lumber and 10,000 feet of laths a day. During the years 1868 to 1872 they cut more than 40 million feet of lumber. The Truckee Republican of July 27, 1872 boasted: "Boca sends abroad more tons of freight, counting lumber, shingles, laths, wood and ice, than any other point between San Francisco and Omaha." From 1873 to 1877 Boca Mill maintained a daily output of about 40,000 feet, their annual cut ranging from 5 million to 6 million feet. By 1878 they controlled 5,728 acres of timberland and, although 1878 and 1879 were rather dull seasons, they ran at almost full capacity.

During the period of railroad building that part of Sierra Country within the Truckee Basin experienced a stimulation in lumber production. The small water-run mill of Parsons & Bros. cut about 8,000 a day up in Sardine Valley and operated from 1867 until 1871 or 1872. In 1876 the Crystal Peak Lumber Company, composed of S. A. Hamlin, R. S. Meacham and Alexander McIntosh, built a sawmill in Dog Valley which flumed lumber 5 miles to Verdi, landing their product half a mile from the Verdi Mill which they supplied with yellow pine. This flume, en route to Verdi, went past the Crystal Peak Shingle Factory and, in 1877, furnished Wood & Fletcher, the owners, with blocks enough to turn out from 12,000 to 15,000 shingles a day.

On the Truckee River a mile above Verdi, John P. Foulks, the mayor of Essex, had a mill which ran by an overshot water wheel from 1875 until 1881. This mill contributed its share of timbers to the brisk Truckee River trade of the seventies.

Proportional to the 376 million feet of lumber manufactured by the Truckee River mills from 1868 to 1880, was the immense quantity of fuel wood cut for the Central Pacific Railroad and for the hoisting engines on the Comstock Lode. No complete records of the exact amount of fuel cut during this period are available but historians and old newspapers have left clues, which reveal that tons of it were consumed, "In a single year the purchases of railroad wood have amounted to 75,000 cords at a total cost of over \$300,000", stated the California Illustrated Times of December 25, 1877. From 1873 through 1879 inclusive, 1,987,180 cords⁶⁰ were sent by Truckee River woodmen to the mines of the Comstock.

Among the leading wood cutters of this period, 1868 through 1880, were A. M. Wicks who cut and floated wood from his 790-acre

⁶⁰Angel, Myron, ed. 1881. History of Nevada ... 680 pp., illus. Oakland, California. See page 282. Also See Lord, Eliot. 1883. ... Comstock mining and miners. 451 pp., illus. Washington, D. C. (U.S. Geological Survey Monograph IV). See page 351.

timber ranch near Bronco. In the vicinity of the Banner Mill near the headwaters of Sagehen Creek Abner Weed cut wood from his timber tract. During 1875 the Donner Boom & Lumber Company expended \$8,000 to build a dam near Truckee and to improve the channel of the Truckee River from Donner Lake vicinity, making it "the best stream on the coast" at that time for driving logs. This organization, in which Brickell & Kruger of the Truckee Lumber Company were heavily interested, in 1877 supplied logs for the Truckee Lumber Company's mill at Truckee. The Donner Boom & Lumber Company also cut wood on a large scale, for instance a contract of 10,000 cords in 1877.

Sisson, Wallace & Company, with parcels of timberland throughout the Truckee River area, were probably the biggest wood operators in the Basin in this period. They did a substantial business in charcoal⁶¹, also, employing, in 1872 more than three hundred and fifty Chinese to cut wood and burn charcoal near Truckee, this product going to the Central Pacific Railroad and to the smelting works of Nevada and Utah. They shipped from 1,000 to 2,000 bushels of charcoal weekly to Virginia City in 1874 and in April of that year they had orders from Utah for about 8,000 bushels a day.

EFFECT ON THE CALIFORNIA REGION OF THE BUILDING OF THE VIRGINIA & TRUCKEE RAILROAD, 1869 - 1872⁶²

For the lumbering operators along the Truckee River the Central Pacific Railroad had supplied adequate and economical transportation eastward for their wood and lumber since 1868 when the railroad went through Truckee, but still they could not furnish their product directly and at reasonable rates to their biggest consumer, the Comstock Lode, until another railroad connected the Truckee River country with the lode area. And this important link was begun in 1869 - the Virginia & Truckee Railroad. On January 29, 1870, the Virginia & Truckee Railroad made its first run from Carson City to Virginia City, a distance of 21 miles⁶³. On August 24, 1872, its thirty-mile northern extension from Carson City reached Reno, there meeting the Central Pacific⁶⁴ and, for the Truckee River lumber operators, the problem was solved - lumber and

⁶¹ Truckee Republican - Thursday, May 23, 1872, p. 2 c. 1 and Territorial Enterprise - Saturday, May 25, 1872, p. 2 c. 2.

⁶² The V & T was not the first proposed railroad between the Central Pacific tracks at Reno and Virginia City. In 1867 the Bank of California and Bolton Barron & Company formed filed for a corporation with the Secretary of State to build a railroad from six miles below Stone & Gates Crossing to Virginia City, bypassing Washoe Valley. (This would have been in the Largomarsino Canyon area.) Estimate cost was \$750,000; length was seventeen miles. It was estimated that this railroad would deliver cordwood at \$9.50 in Virginia City. - Eastern Slope - Saturday, May 11, 1867, p. 2 c. 3.

⁶³Gold Hill Daily News, January 29, 1870, page 3 column 2.

⁶⁴The Daily State Register (Carson City, Nevada), August 24, 1872, page 2 column 1.

wood could travel over the Central Pacific via the Virginia & Truckee straight to the Lode⁶⁵. The effect of the building of the Virginia & Truckee road on the lumber and wood markets of both California and Nevada regions of the Truckee Basin can best be shown by ...

Table 1. -Shipments of lumber and wood over the Virginia & Truckee Railroad, 1873 - 1879⁶⁶

<u>Year</u>	<u>Lumber shipments</u>	<u>Cord Wood</u>
1873 (first half)	23,938,624 feet	43,368
1874	52,220,801 "	139,808 "
1875	72,526,465 "	179,295 "
1876	71,633,072 "	212,278.5 "
1877	38,981,967 "	221,496.75 "
1878	34,427,502 "	205,311.25 "
1879	31,443,771 "	185,622.5 "

NEVADA REGION

DEVELOPMENT OF LUMBERING FACILITATED BY BUILDING OF THE VIRGINIA & TRUCKEE RAILROAD, 1869-1872

On the Nevada side of the Truckee Basin the coming of the Virginia & Truckee Railroad stimulated the greatest activity in V-fluming operations, for the lumber operators could flume their lumber and wood down the mountains to Huffaker's Station, Washoe, Ophir, Franktown, Mill Station, Lakeview, and Carson City and have it freighted quickly and cheaply to the Lode. And even though the cheaper transportation brought down the price of wood and lumber, the increased volume of business more than offset the decreased cost of the product. Decreased cost were seen even when the first spur of the railroad from Carson City to Virginia City fell at once from \$15 to \$11.50 a cord and by the spring of 1870 contracts were made at \$9 a cord⁶⁷.

The stimulation given to the lumbering operations of Ormsby and Douglas Counties, alone, is shown in the Nevada Surveyor

⁶⁵ The Virginia & Truckee Railroad was not the first proposed railroad between Reno and Virginia City. In 1867 the Bank of California and others proposed a rail route south of Stone & Gates Crossing to Virginia City by-passing Washoe Valley. Washoe Weekly Times, 1867

⁶⁶Source of data: 1873, Angel, Myron, ed. 1881. History of Nevada ... 680 pp., illus. Oakland, California. See page 282; other years, Lord, Eliot. 1883 ... Comstock mining and miners. 451 pp., illus. Washington, D.C. (U.S. Geological Survey Monograph IV) See page 446.

⁶⁷Gold Hill Daily News, January 8, 1870, page 3 column 1.

begun a wood cutting business. The two, as partners, continued fluming operations. Their flume ran from Tamarack Flat on Galena Creek to the dump at Washoe City⁷¹ and they hauled their wood from there to Virginia City until August 1872 when the Virginia & Truckee Railroad was completed and thereafter they sent their product over its tracks, from 10,000 to 15,000 cords annually. In December 1881 Peter Marker sent his last 10,000 cords down to Washoe City and put his flume for sale.

In White's Canyon the White's Canyon Flume Company in 1876 and 1877 were cutting 5,000 a day with a one-saw, steam plant.

During this decade was built the largest V-flume in Nevada by the firm of Mackay & Fair, operators of the "Big Bonanza" which made the Comstock Lode so famous. As early as 1863 James Mayberry established a lumber camp for Mackay & Fair in the vicinity of Hunter Creek, known as Mayberry Camp⁷². But for 11 years this tract of yellow pine, fir and tamarack was apparently untouched. Then, in 1874, Mackay & Fair, together with Flood and O'Brien, embarked upon some intensive development in their five Comstock mines (Consolidated Virginia and California, Hale & Norcross, Gould & Curry, Best & Belcher and Utah claims) and they incorporated as the Pacific Wood, Lumber & Flume Company. For it was evident that to remove from these claims the enormous body of ore, as they planned, would require the substitution of a solid filling of hewn timbers to the amount of not less than 50 million feet⁷³.

So in 1875 on their 12,000 acres of timberland at the head of Truckee Meadows the company built two steam-powered sawmills, one on Hunter Creek which had a daily capacity of 25,000 feet; the other, two miles below on the middle fork of Evans Creek and half way to the summit, which was capable of cutting 70,000 feet each day. To get this lumber and wood to their mines on the Comstock, the company built two of the largest V-flumes in Nevada: At a cost of \$250,000 their 15-mile flume from the mill on Hunter

Creek to Huffaker's Station was designed and completed by John B. Hereford in 10 weeks. It stood most of the way on trestle work, required in its construction 2 million feet of lumber and 56,000 pounds of nails, and had a carrying capacity of 500 cords of wood or 500,000 feet of lumber a day. It would have required two thousand horses to do the work performed by this flume. Two years later, in 1877, a second V-flume, 23 miles long, connected both mills. A printing telegraph extended along the entire length of the flume so that orders could be transmitted to the men stationed at intervals along their courses.

By 1877 more than 3,000 acres of timberland of the Pacific Wood, Lumber & Flume Company had been cut over. While visiting the plant a reporter of the San Francisco Bulletin on June 26, 1877 wrote:

In California after everything of value has been taken,

⁷¹From information supplied directly to R. C. Wilson, by James Gregory, Washoe.

⁷² The location of Mayberry was at the mouth of Hunter Creek, up the Creek from Hunters encampment at the river.

⁷³Dewey, Squire Pierce. 1878. The Bonanza mines of Nevada ... 84 pp. San Francisco. See page 19.

the young trees have been taken, the young trees are left standing to become in time food for the axe and saw, but here the second growth is so very slow that it is not taken into account. Everything is cut even to the smallest saplings.

And so, in 1877, the Upper Mill on Hunter Creek, having cut off all accessible timber, stood idle, but the plant on Evans Creek continued to turn out 100,000 feet every 24 hours. In addition, the company was supplying its silver mines with about 100,000 cords every season until the spring of 1880 when no more wood was flumed to Huffaker's Station. At this time the payroll of the company amounted to \$81,000 per month; 800 men were at work cutting, sawing and fluming; and at the flume terminus at Huffaker's 120 Chinese piled and loaded wood⁷⁴.

As early as 1869 down in the Clear Creek country, Chamberlain & Company operated a V-flume which extended for 5 miles from a point near the summit to its terminus about 2 miles west of Carson. This flume was in use from 1869⁷⁵ until 1874⁷⁶, perhaps longer.

During the same time the Summit Flume Company had a V-flume along the northern bank of Clear Creek. Its terminus was at the Virginia & Truckee side track and wood yard about a mile south of Carson and it ran around the base of the mountain via Clear Creek up to the summit. The main flume was about 17 miles long and had several branches and feeders that reached the heavy forests in this part of the Sierras. During 1874 the Summit Flume floated to Carson City from the boarders of Lake Tahoe 49,558 cords of wood and 15,497,320 feet of lumber⁷⁷.

By 1879 the total length of wood flumes in Nevada was more than 80 miles and all were on the mountains sloping down from the eastern shore of Lake Tahoe to Carson and Washoe Valleys. The amount of wood transported through them during 1879 was 171,000 cords and the amount of lumber was 33,330,000 feet⁷⁸.

The Summit Flume Company finally became the property of the biggest lumber manufacturers in Douglas County, the Carson & Tahoe Lumber & Flume Company, which, like the Virginia & Truckee Railroad, was an enterprise of the Bank of California. This organization, managed by H. M. Yerington and D. L. Bliss, began

⁷⁴See Nevada State Journal - Friday, July 28, 1876, ,page 3 column 2. The article states that one hundred and ten Chinamen are employed in piling and loading. A related article about Chinese at Huffaker's Station is found in the Nevada State Journal - Saturday, July 22, 1876, page 3 column 1 relating a murder among the Celestials in their cabin area.

⁷⁵Nevada Surveyor General. 1871. Report ... for ... 1869 and 1870. 24 pp. Carson City, Nevada. See page 10.

⁷⁶Nevada Surveyor General. 1871 Report ... for ... 1869 and 1870. 24 pp. Carson City, Nevada. See page 12.

⁷⁷Nevada State Mineralogist. 1875. Biennial report ... for...1873 and 1874. 191 pp. Carson City, Nevada. See page 82.

⁷⁸Bancroft, Hubert Howe. 1890. History of Nevada, Colorado and Wyoming ... 827 pp. San Francisco. See pages 289-290.

operations at Glenbrook in 1873 and until the end of 1897 was among the most important lumber enterprises in the Truckee Basin. During 1873 when this company went into business the Nevada Surveyor General reported the lumber product of Douglas County as 906,000 feet⁷⁹. Due to the activities of Yerington & Bliss, so the Nevada Surveyor General stated in his report for 1889 and 1890⁸⁰, this rose in 1875 to 21,700,000 feet and varied, according to demand, from 14,000,000 feet to 20,000,000 feet annually since 1875. During this period Yerington & Bliss handled from 15,000 cords to 30,000 cords of wood each summer.

In August of 1875 Yerington & Bliss completed a narrow gauge railroad 14 miles long from Glenbrook to the eastern summit at the head of Clear Creek. This railroad climbed the mountains by a zigzag grading so abrupt that four lines of rail on a portion of the road could be seen within a few hundred feet from the lower to the upper⁸¹. From the summit the 17-mile V-flume took their lumber, via Clear Creek Pass, to Carson City where the Virginia & Truckee picked it up at the flume dump and carried it on the to Comstock Lode. James Horace Gardner, whose father, M. C. Gardner, cut on contract for Yerington & Bliss for 20 years around Lake Tahoe recalls, in an article in the Sacramento Bee of June 22, 1927, that at the dump on the Gardner place at Carson where, on four railroad tracks, two hundred Chinese used to handle the lumber, he had seen "as much as 70,000 cords of wood in one pile and millions of feet of lumber of all dimensions".

During the season of 1876 the two locomotives on the narrow-gauge railroad from the Glenbrook Mill to the summit took out as much as 360,000 feet of lumber at a trip. Besides the lumber there was a large amount of this wood taken from the mills at Glenbrook to the summit and thousands of cords of wood from the side of the mountains sloping to the lake.

From 1875 Yerington & Bliss began to raft great shipments of logs across Lake Tahoe from Sugar Pine Point in El Dorado County. M. C. Gardner was logging for them and in March of 1875 he built a 5-mile broad gauge railroad into the pine forest there. In June he began the construction of another broad gauge railroad through the Lake Valley timberlands of Yerington & Bliss, also located in El Dorado County at the southern end of Lake Tahoe. This railroad landed the logs at the lake shore and the steamer, "Emerald", towed them across to the two Glenbrook sawmills which could then cut 150,000 feet a day. James Horace Gardner, in his reminiscences in the Sacramento Bee of June 22, 1927, refers to the operations in Lake Valley: "After finishing his contracts in the summits around Glenbrook and Spooner's Station, my father took a big contract to cut and log all the timber from Rowland's⁸² to Tallac and for 12 miles back from the Lake to Meyer's Station. It took him 6 years

⁷⁹ Nevada Surveyor General. 1891. Report ... 1889-90. 195 pp. (Carson City, Nevada). See page 32.

⁸⁰ Nevada Surveyor General. 1891. Report ... 1889-90. 195 pp. (Carson City, Nevada). See page 188.

⁸¹ See Nevada State Journal - Wednesday, October 18, 1876 - Prismoidal Railroad.

⁸² near present site of Al Tahoe

to do it." The Gold Hill Daily News of August 5, 1875 also reported this: "A large portion of the best timbered lands of the valley⁸³ have been purchased by Yerington, Bliss & Company, who have leased them to Major M. C. Gardner." And four months from the time he took this contract, the same newspaper stated in its issue of December 10, 1875, Mr. Gardner had "cut, hauled and deposited in the lake 6,700,000 feet of logs and the large belt of timber seems hardly touched."

James Horace Gardner describes the method his father used in clearing off these forests:

"He bought a big broad gauge engine and 9 flat cars from the Virginia & Truckee Railroad Company at Carson, loaded that locomotive on two trucks coupled together and hauled it to Glenbrook from Carson. It took him 6 weeks to get it 14 miles. On straight roads he pulled it along with oxen, but when it came to the short curves and the summit, they had to use powerful chain blocks. At Glenbrook the engine was transferred to barges and towed to the Grove, near Tallac.

All of one summer was spent in getting the cars and rails to Tallac. They commenced in the spring as soon as snow permitted them to bring in the cattle and worked until snow drove them out in the fall. Piles were driven in the lake at the Grove, which was the landing place for the logs to be dumped from the cars into the lake.... The skidway to roll them off the cars was the length of 9 flat cars and as high as the cars, so that all they had to do was to knock the iron straps down which bound the logs on, and they rolled into the lake. It took only 10 minutes to unload the whole train. There was a man for each car, as the nine logging trucks were strung along the track for about 2 miles. The breakwater held 600 carloads, and there was an average of 72 carloads daily.

Once a week the steamers, "Emerald" and "Meteor", towed rafts of the logs over to Glenbrook and the rafting was quite novel in operation⁸⁴:

The logs forming the raft are not pinned or in any way fastened together. The steamboat runs up to a bay or other place where logs are lying, and casts anchor. A boat is then sent out which carries a long cable strung full of large buoys. This cable is carried around a proper fleet of logs, as a seine is carried around a school of fish. The steamer then weighs anchor and starts across the lake, towing along the logs about which the cable has been cast. No matter how rough the lake may be, the logs remain in a bunch, being attracted the one to the other, and clinging together as bits of stick and chips are often seen to do when floating on a lake

⁸³Lake Valley

⁸⁴Wright, William. 1876. History of the Big Bonanza ...569 pp., illus, San Francisco. See page 243.

or stream.

By 1877 Yerington & Bliss and Captain Pray in Douglas County and Mackay & Fair in Washoe County were the only extensive lumber operators of the nine then cutting along the western margin of the State of Nevada and these were all located in the eastern part of the Truckee Basin; four were in Douglas County and five in Washoe County.⁸⁵

From May 1877 when Yerington & Bliss combined with the Virginia & Truckee Railroad to raise shipping rates on the lumbermen along the Truckee River, they supplied practically all of Nevada's timber needs for instance, 30,000 feet of timber for the Comstock mines and 250,000 ties for this railroad in 1879. The bulk of this came from their 6,474 acres in Lake Valley, El Dorado County, where they cut 6 million feet of logs during 1879. This tract also yielded their 1880 shipments to Carson City which totaled some 20 million feet of lumber and 70,000 cords of wood.

Captain Pray had the distinction of being the first lumber operator of this area to tow considerable amounts of logs across Lake Tahoe. In the fall of 1867 he began to have logs cut on his land near Tahoe City and brought over every other day by the steamer "Governor Blasdell" to his plant at Glenbrook where his sawmill turned out 40,000 feet of lumber and his shingle mill cut 20,000 shingles a day. By 1873 the "Governor Blasdell" and another steamer, "Truckee", were still towing logs, railroad ties and mining timbers across to the Pray Mill. Toward the close of 1875 Captain Pray secured additional forests on the Glenbrook side of the lake by purchasing the "magnificent timber tract comprised in the Friday Ranch on the southeast shore of Tahoe", so that during 1876 the Pray Mill had the biggest season since it began cutting in 1861. It ran to full capacity until 1879.

Yerington & Bliss were not only the leading lumbermen in Nevada at this time but in this same year, 1877, to make their position more secure, they combined with the Virginia & Truckee Railroad and raised shipping rates on the Truckee River lumbermen, thereby shutting off considerable competition.

DECLINE OF LUMBERING THROUGHOUT TRUCKEE BASIN DUE TO FINAL SLUMP IN COMSTOCK ORE PRODUCTION

A factor that affected lumber operators throughout the entire Truckee Basin was the abrupt falling off in demand for wood and lumber by the Comstock silver mines: in 1877 the annual silver output reached its all-time peak, of more than \$36,000,000 and it decreased sharply to about \$19,000,000 in 1878, falling to a little more than \$1,000,000 in 1881⁸⁶. And the lumber production reflected this downward curve. The Truckee Republican of August 31, 1878 reported:

At Truckee, sawmilling is reduced one-half or more this season. The only market is in Eastern Nevada and Utah. John Kneeland, Banner Mill Company, Foulkes and Wallace

⁸⁵Wright, William. 1876. History of the Big Bonanza ...569 pp., illus. San Francisco. See page 38.

⁸⁶Nevada State Bureau of Mines. 1923. Bulletin 1923. 295 pp. Reno, Nevada. See page 226.

are not running their mills at all. The Truckee Lumber Company, Elle Ellen, Schaffer, the Boca Mill Company, and Richardson Brothers run on nearly full time. Machomick's and the Pacific Lumber & Wood Co.'s mill at Clinton just closed.

PEAK OF LUMBER PRODUCTION IN 1877: LUMBER PRODUCTION OF THIS PERIOD, 1868-1889

The enormous quantities of lumber and wood production during the peak period is indicated in the petition of the Truckee sawmill owners who were indicated in 1878 for cutting timber on Government land after 1871 when the right to cut timber from public lands, granted the Central Pacific Railroad during its period of construction only, was revoked. But their petition is also the record of the accomplishment of these substantial lumbermen who had developed the Truckee River country out of a vast virgin forest. According to the San Francisco Call of March 27, 1878 they set forth that:

1. There were used in the construction of 40 miles of snow sheds 300,000,000 feet of lumber; to rebuild these sheds and to keep the road in repair, 20,000,000 feet were required annually.
2. The silver mines of Nevada required 70,000,000 feet annually
3. All lumber for the construction of towns in Nevada and part of Utah came from the Sierra Nevada and cannot be obtained elsewhere.

The yield of lumber up to 1880 in the Truckee River was estimated by the Reno Gazette of September 14, 1881 at 2 billion feet.

The Nevada region of the Truckee Basin has been now nearly denuded by 1880⁸⁷ of the 100,000 acres of timberland which stood in Washoe County in 1862⁸⁸, the 40,000 acres standing in Douglas County in 1862⁸⁹ and of the 20,000 acres formally in Ormsby County in 1866, date of the earliest available report on the timbered acreage of Ormsby County⁹⁰.

Using these statistics and the estimates of average cut per acre made by Franklin B. Hough - that cutting of 40 million to 50 million feet annually involved the clearance of about 3,500 of

⁸⁷Sargent, Charles Sprague. 1884. ...Forests of North America ...United States Bureau of the Census. Tenth Census, 1880. (Census reports, 9.) See page 571.

⁸⁸Kelly, J. Wells, comp. 1882. ...Directory of Nevada Territory ... 264 pp. San Francisco. See page 96.

⁸⁹Kelly, J. Wells, comp. 1862. ...Directory of Nevada Territory ... 264 pp. San Francisco. See page 49.

⁹⁰Nevada Surveyor General. 1869. Resources of the Pacific Slope ...678 pp. New York. See page 74.

forest land⁹¹ - it could be guessed that somewhere between 150,000 and 200,000 acres had been cut over in the Truckee Basin during this first quarter century of lumbering, from 1865 through 1880.

THIRD PERIOD, 1881 THROUGH 1909: TIMBER CUTTING IN THE TRUCKEE BASIN BEGINS TO TAPER OFF

In its issue of September 14, 1881, the Reno Gazette gave out these interesting figures relative to the amount of timber still standing in the Truckee Basin after "the comstock has absorbed a thousand million feet of timber and lumber and the vast desert between here (Reno) and Salt Lake has probably taken as much or more in the last 20 years". The Gazette believed that there remained sufficient virgin forest in the great canyon of the Truckee and its tributaries for 50 years of cutting and the timber experts they consulted supported this view. The experts made the following estimates:

There remain standing in locations that make it available to market, with very little additions to the present facilities, over 5,000,000,000 feet of timber and over 10,000,000 cords of wood.... Around Lake Tahoe there has been an immense body of timber and although it has been cut into very largely, it is believed that there is about a thousand million of feet still standing..... At the north end of the lake there is a very nice lot of timber falling before the axes of Folsom & Marlette's men. Between Tahoe and the town of Truckee there are nearly 500,000,000 feet that can be reached by the Truckee Lumber Company's works, which are very complete.... On Squaw Creek and other branches, there are large patches that will come in. On the east side of the Truckee River a number of branches come in. The first is Martis Creek. The mills of Richardson Bros. and McFarland stand in a basin that will turn out over 100,000,000 feet. George Schaffer has a very fine lot of timber that will keep his mill running for years. He will soon move farther up the creek. Juniper Creek, where Burkhalter (Superintendent of the Pacific Wood & Lumber Company) built his railroad, will turn out over 75,000,000 and the road can carry more from an immense flat east of Bronco, is very steep and high but it has a fine growth. It will likely all be cut for wood and flumed out.... It will furnish 200,000 cords of 4-foot wood. Between Juniper and Wicke's Creek lies a very rough canyon on Gray's Creek that has nearly 50,000,000 feet of timber. Between Wicke's and Verdi, on the east side, there are probably another 50,000,000 feet.

On the west side of the Truckee lies the main supply. The east side is a narrow ridge, but the west side rises into the grand range of the Sierra Nevada itself. Coming down the river from Tahoe, the first break after leaving

⁹¹Hough, Franklin Benjamin. 1878. Report upon forestry ... (in 1877). United States Forest Service, Report on Forestry, 1. See page 593.

the Truckee Lumber Company's territory, is Donner Creek, which heads in Donner Lake. The timber around the lake is pretty well cut out and there is probably less than 10,000,000 feet in the whole basin up to where the road crosses the summit. On Trout Creek which comes in through the town of Truckee there are 20,000,000 feet. Alder Creek has 60,000,000; Prosser Creek, 150,000,000; Sagehen, a tributary of the Little Truckee, 200,000,000....

On the Little Truckee and branches there will be found the vast quantity of 1,000,000,000 feet, besides 4,000,000 cords of wood. About half of this quantity lies in a red fir country from Weber Lake around the high level country that crosses the summits west of there, and it will come this way rather than seek a market across the rough country between there and the Sacramento Valley. In Truckee Valley and the divide between the Little Truckee and Sierra and Sardine Valleys, another 1,000,000,000 can be cut and run out at Boca. From Camp 20 to Verdi there must be 100,000,000 but it will be more apt to come out as wood than lumber as it is in very rough and dry country and rather scattered. Dog Valley lies back of Crystal Peak and has excellent facilities for reaching the track. It will afford between 50,000,000 and 75,000,000.

As lumbering in the Truckee Basin continued for 56 years from 1881, the calculation of the Reno Gazette proved to be fairly accurate - that there was enough timber in this region for a 50-year term of cutting. From 1881 lumbering in the Truckee River county proceeded at a slower and steadier tempo, supplying the Central Pacific and other railroads, other mines and the building and fuel needs of growing populations as far as the Wasatch Range in Utah⁹². Truckee Basin has markets in Arizona, New Mexico and Texas, according to the Reno Gazette of March 30, 1881, and some as distant as Central America and Alaska, according to the Truckee Republican of October 9, 1880 and of November 12, 1886.

The last 56 years of lumbering in the Truckee Basin, from 1881 through 1936, may be divided into two periods, one from 1881 through 1909; the other, from 1910 through 1936. To the former belongs the chronicle of the final operations of seven of the nine big lumber operators who during the seventies had transformed this area from a vast primeval forest into a region of sawmills: Yerington & Bliss, George Schaffer, Richardson Brothers, the Truckee Lumber Company. By 1909 all seven companies had ceased to cut timber along the Truckee. In this period are included also records of smaller, contemporary operators who cleared off scattered patches of timber throughout the Truckee Basin during these eighteen years.

In the final division, from 1910 through 1936, fall the activities of half a dozen other small operators and two big companies, the Verdi Lumber Company which concluded cutting in 1926

⁹²California State Mining Bureau. 1882. Second report of the state mineralogist from December 1, 1880, to October 1, 1882. 288 pp. Sacramento, California. See page 203.

and Hobart's (Sierra Nevada Wood & Lumber Company) which ceased operations in 1936. And to this period also belongs the story of the Floriston Pulp & Paper Company whose cutting operations were distinct from all of these.

MOST (SEVEN) OF THE LEADING COMPANIES TERMINATE OPERATIONS BY 1909

At Glenbrook in 1881 stood the last of Nevada's great sawmills, the plant of Yerington & Bliss. Since 1875 when they began making inroads into their timber in Lake Valley, this area had become the center of their cutting operations. The logs felled in this valley were brought to Al Tahoe and towed to Glenbrook by the iron tug, "Meteor". Here, from 1881 through 1888, their annual cuts totalled about 121 million feet of lumber, this large output being made to meet a revival in mining on the Comstock which lasted from 1881 until 1897 while low grade ores left by the Big Bonanza were being worked. The production ceiling of this revival period was reached in 1888 but rapidly declined thereafter⁹³ and, in proportion, the demand for lumber fell. Yerington & Bliss continued to cut from their timberlands on Lake Tahoe for a mile or two back from its shores until the close of 1897 when, for want of accessible timber, they had to shut down their mills after 25 years of extensive operations. Three years later the rails, locomotives and freight cars that had been in use on the narrow gauge railroad which ran from the Yerington & Bliss mills at Glenbrook 6 miles to the summit were all transported across Lake Tahoe to build the Lake Tahoe Railway & Transportation Company. And in 1903 the last vestige of this company disappeared from Glenbrook when the Truckee Lumber Company bought the idle sawmill at Glenbrook and moved it to Truckee.

Northwest of Lake Tahoe in Placer County George Schaffer's plant in Martis Valley in 1881 was a community in itself with the Schaffer residence surrounded by the homes of his employees. Although no natural stream supplied his 6,000 acre mill track, he made an artificial mill pond capable of holding 3 million feet of logs, the water for the pond furnished by a flume from Martis Creek, a mile above. Ox teams drew the logs from the forest to the pond and water carried them directly to the great saws where millmen placed them in position to be cut. The "bright, fresh, yellow" lumber fir and pine then fell into the water of the flume which passed under the mill and was carried 3 miles across to the Schaffer yards a mile east of Truckee.

In the spring of 1883 Mr. Schaffer began to build a new mill, a double one with a daily capacity of 90,000 feet a day, on the west branch of Martis Creek, most of which he owned. There he had more than 100 million feet of virgin timber to draw upon. He had a natural pond at this mill site and this supplied water and a reservoir for logs brought from the forest at the rate of 35,000 every day. His annual cuts during the eighties ran about 3 million with a record output of 8 million for 1887. In the nineties he cut about 2 million each year. By 1892 when the accessible timber had been taken, he built a logging railroad to convey logs to his mill, using a locomotive and four cars for the purpose.

The Schaffer mill cut at the rate of 40,000 feet a day through the 1900's until September 1905 when fire destroyed the plant and

⁹³Nevada State Bureau of Mines. 1923. Bulletin 1923. 295 pp. Reno, Nevada. See page 226.

concluded Mr. Schaffer's 38 years of lumbering in the Truckee Basin, 34 of them in the country around Martis Creek.

By 1889 Richardson Brothers, whose mill stood several miles west of Schaffer's had constructed two ample reservoirs: the lower at the mill was used to receive the saw logs which were hauled directly from the water to the mill by machinery. In 1882 they built a box factory at their lumber yard at Martis Creek Station where they employed 75 men. This was one of the five leading box factories in the Truckee Basin during the 1880 decade. During the 1883 season a new flume was built to carry material from their mill in Martis Valley to their box factory and planing mills 5 miles down to Martis Creek Station. And they expanded their operations further by building another sawmill a few miles south of their first. When fire wiped out the box factory, together with a million feet of lumber and 2,000 cords of wood on July 27, 1887, the Richardsons began another box factory at Truckee and to it hauled lumber from their sawmill in Martis Valley by steam wagons. During the eighties the Richardson mills cut from 3 million to 4 million annually.

During 1891 the Richardson steam wagon made daily trips with 25,000 to 30,000 feet a trip over the 8 miles between their sawmill and their lumber yard in the eastern environs of Truckee. The lumber was then taken across the Truckee River by means of a chute to the box factory which turned out two carloads of boxes every day. This plant used the entire 4 million cut in 1891 at the Richardson sawmills; in 1892 it used the entire product of their mills plus the product of "two or three other concerns". Incidentally, their box factory furnished power for the electric light plant of Truckee. In the fall of 1895 the Richardsons built a road 12 miles long from their box factory at Truckee to Lewis' Mill in Sardine Valley in order to deliver at the factory some 2 million feet of lumber which they had purchased from Lewis. This haul was made by means of steam wagons.

The Richardsons operated their sawmill until 1906, completing 33 years of cutting in Martis Valley. Yet, after taking off quantities of sugar and yellow pine, several hundred acres of white and red fir timber still stood on their land. The Crown-Columbia Company at Floriston in later years bought some of this land intending to clear off the fir but never did so⁹⁴.

The Truckee Lumber Company at Truckee, from 1880, ran the most extensive sash, door and blind factory on the Pacific Coast. A two-story building 50" x 250" feet, with an L 50" x 40" feet, housed the machinery for the planing, grooving, lath and shingle making. Nearby stood a fire-proof dry-house of two stories which was 40' x 60' feet in size and a store house 30' x 50' feet. These buildings and the houses of the employees, who numbered from one hundred to one hundred fifty, formed the whole upper portion of the town of Truckee.

From 1880 the Truckee Lumber Company began to divert large quantities of lumber to box making, using amounts such as 3 million feet in 1880, 7 million in 1881 and 9 million in 1882 for this purpose. At their warehouse in San Francisco they put in a full set of machinery for making boxes so they could ship the lumber from the mill at Truckee and manufacture all small box orders

⁹⁴From information supplied directly to R. C. Wilson by Warren Richardson.

there. In 1882 at the San Francisco warehouse fifty men nailed boxes together and this product went to Arizona, New Mexico Texas and Central America.

The year 1883 was one of great activity for the Truckee Lumber Company. The company controlled some 12,000 acres of timberland, their four logging camps cutting along the Truckee River from Tahoe to Verdi. In April they bought the plant of the Crystal Peak Lumber Company in Dog Valley, operating it until 1889. They were using the entire output of Elle Ellen's mill. At their camp on Bear Creek in Placer County they built a 2 mile track for use in logging with horses. In the 1883 summer they assigned to H. L. Day the construction of two miles of narrow gage railroad up Washington Creek. And in August they built another narrow gage railroad about 3 miles above Truckee on the east side of the river, this track extending into the timber a mile and a half.

The double mill at Truckee turned out 75,000 feet every 12 hours. From 1882 about 20 million feet of lumber were annually consumed by their furniture factory and by the addition of improved machinery in the sash and door plant, they produced 11,000 doors, 8,000 windows and 8,000 blinds during the 1882 season. In connection with the mammoth plant at Truckee, the company organized. In 1883, a "first class fire engine and hose carriage, all provided with neat and substantial engine house". "For this," says the chronicler, "the citizens of Truckee have had reason to thank them repeatedly for their prompt attendance upon Truckee fires." The year 1883 was the Truckee Lumber Company's seventeenth year of operation. Since 1867 they had cut 150 million feet of lumber in the vicinity of Truckee.

From 1884 to the end of the decade the Truckee Lumber Company's rate of timber cutting diminished, their output for the period from 1884 through 1889 being about 31 million feet. They operated only two logging camps, one, known as Wilson's Camp, at the an altitude of 7,500 feet near the headwaters of the Truckee. And they continued to run the Crystal Peak Lumber Company Mill which they had bought from Katz & Henry in 1883, here cutting 4 million feet during 1887. The year 1886 was their peak season in box making. Never before had their factory made and shipped out as many boxes - 8,000 orange crates to Southern California and 50,000 salmon crates to Alaska; In 1887 they sent out 7,681,433 feet of 484 carloads of pine in the form of boxes.

Cutting records of the Truckee Lumber Company during the 1890 decade are available for 1890 when their output was 4 million feet; for 1892, 5 million feet; for 1896, 9 million feet and for 1897, 10 million feet, a total of 28 million feet. With complete records, the cut for these ten years would probably be about equal to that of the previous decade.

They continued to turn out large amounts of boxes at the factory at Truckee, in 1891 employing about one hundred men at the box plant and in the mill. Forty men were at work in the forest during the summer of 1891. The company owned a large mill in Oregon.

In 1884 this organization made one of the largest timber trades ever effected on the Pacific Coast by exchanging 5,000 acres of their land lying between Truckee and the Sierra Valley for an equal acreage between Truckee and Lake Tahoe which was owned by the Sierra Nevada Wood & Lumber Company. This enabled the Truckee Lumber Company to continue cutting with scarcely any additional equipment in the vicinity were they had been operating since 1873.

So the last years of the company's activities in the Truckee Basin, from 1900 through 1909, were occupied in logging out their land which was accessible to the Tahoe Railroad. By the close of 1899 they had exhausted all the timber at Klondike Camp just west of Martis Creek. The next year a few million logs were hauled over the Tahoe Line to the mill at Truckee from the Brockway vicinity and their logging in that quarter was ended. By July 1900 they began cutting out Ski Canyon. In May 1901 H. C. Barton opened up for the company "Camp One" with twenty-five men, later increased to a force of sixty. To this camp they brought over their donkey engines from Camp Jappa where logging was not started until late August. By mid June the Tahoe Railroad was making two round trips a day from the logging camp at Tahoe to the mill at Truckee, 14 miles, and handling about 75 logs each round trip.

In May 1902 the Truckee Lumber Company's factory at Truckee burned down and they suffered a \$200,000 loss, but by early June the immense frame of a new factory was well begun. In 1903 they sustained another loss by fire when their sawmill at Truckee burned in late October and with it about 15,000 feet of lumber. Whereupon the company purchased the old Yerington & Bliss mill at Glenbrook, moved it to Truckee and had it running by the end of the year.

In 1903 they built a branch railroad up to the head of Ward Creek where they logged until 1909, cutting out most of the timber. In May 1904 they began to build a new sawmill about 2 miles west of Donner Lake at a place called Billy Mack's Flat where they owned about 8 million feet. The mill had a daily capacity of 40, 000 feet. On their land around Ward Creek they had about 800 acres of fir and pine, 320 acres in Section 9, the rest in Section 10, and by the new mill on Mack's Flat to be sawed. After Ward Creek was cut out, they ran a branch railroad to Squaw Valley Creek where they had established a camp in 1907 and logged there.

In 1908 their mill at Truckee was running at full capacity sawing red fir that was cut from a tract granted by the Government to the Central Pacific Railroad at the time of its construction.

The Truckee Lumber Company sawed its last log in the Truckee Basin in November 1909 after 43 years of operation. In 1910 they moved their mill machinery to Oroville to cut yellow and sugar pine from their holdings along the Western Pacific Railroad. But they still held 13,360 acres of red fir land along the Truckee River south of Truckee. The last vestige of this company disappeared from Truckee in June 1918 when a fire wiped out the old box factory.

At Elle Ellen's mill on Trout Creek the year 1880 was a productive one. Besides turning out 25,000 feet of lumber and 27,000 feet snow shed timbers a day, he also manufactured 20,000 shingles and 50,000 laths every week. His annual cuts during the eighties ran from 2 million to 3 million feet of lumber plus large orders of cordwood. In 1883, in order to supply his markets, he bought the Alder Creek Mill property, including the mill site, several sections of timberland and 5.5 miles of V-flume which connected the mill with the Central Pacific.

Throughout his last decade of cutting in the Trout Creek country, Elle Ellen continued to furnish cordwood and railroad timbers to his chief customer, the railroad, his outputs during these years being about 4 million feet annually. His mill ceased operations in 1901.

By 1883 the business of the Boca Mill Company had grown so that the company increased its capital and established a new main

office at Sacramento, leaving at Boca only the office of Superintendent D. D. Whitbeck, an accountant, and the men employed in the mill, yards and forest. They specialized in box lumber and pickets, cutting about 8 million feet for this department in 1883. Their cut for the 1887 season amounted to 6 million feet and during the next two years the output was about the same. All of this came from the company's lands on the lower watershed of the Little Truckee, a tract of some 16,040 acres which 23 years of selective, but continuous cutting, had thinned out. The mountains immediately around the mill at Boca had been denuded and so the Boca Mill Company had to shut down earlier than usual in 1889 for want of logs. From that time on it was necessary to take their logs from their timberland on the higher watershed of the Little Truckee, several miles from the mill, and this was accomplished by long drives down the Little Truckee, employed 30 men to cut and bank logs; in summer one hundred fifty men were at work for the Boca Mill Company. In 1908 the company went out of business after having cut timber in the Boca vicinity since 1866.

The Pacific Wood & Lumber Company at Clinton began the year 1880 by sending large daily shipments of lumber to Nevada and Salt Lake City and they also sent wood to Virginia City at the rate of from 8 to 10 carloads a day with the mill turning out 40,000 feet daily. In 1881 they supplied quantities of wood to the Central Pacific Railroad. At that time the company was one of the largest and best appointed on the line of the Central Pacific, with its mill of large capacity, full set of planers, lath and milling machines. The logging camps and mill at Clinton were connected with the main office at Truckee by a telephone line 10 miles long. At the Truckee office the company did a general banking business and sold exchange on all parts of the world. During the eighties the seasonal output ran from 4 million to 7 million feet. The mill at Clinton burned on May 13, 1888, but was rebuilt and cut 40,000 feet a day during the rest of the season. It burned and was rebuilt in July 1889.

During their final years of lumbering, 1891 through 1894, the Pacific Wood & Lumber Company obtained their logs from the country lying between the mill at Clinton and Hot Springs, now Brockway, on Lake Tahoe, and brought them to the mill over their 10 miles of railroad which, in 1892, ran within 3 miles of Brockway. When Superintendent Burckhalter's son closed this mill during the nineties, he sold the machinery and employed a watchmen to look after property. While, making arrangements to sell the buildings and timberland to some Eastern people who planned to reopen the plant, fire completely wiped it out on June 28, 1903.

SMALLER OPERATORS OF THIS PERIOD, 1881 THROUGH 1909

In the same logging period from 1881 to approximately 1909 considerable cutting was done in tracts of forest scattered all the way from the Nevada-California boundary, west through Sierra County and south through Nevada, Placer and El Dorado Counties. Thus, beginning at the state line in Washoe County, Nevada, the operations of the smaller cutters are recorded by county and, roughly, by decade within each county.

Among the smaller mills typical of this division was the Essex Mill at Essex which is situated almost on the Nevada-California Line. John Foulks had run the mill since 1875. He sold it to Hamlin & Doane in 1882. The new owners with a new turbine water

wheel which turned out slightly less than 15,000 feet a day cut off all available timber on the west side of the Truckee River across from the mill site by the close of 1886. About half a mile above the mill they built a dam to back and deepen the waters of the Truckee and a huge flume from this dam to carry logs to the pond by the mill.

A timbered... 'Incline' was built from the floor of the mill down into the pond and iron rails were fastened upon this... so that when logs were needed in the mill, a car was lowered by means of a steel cable wound over a drum. This car was weighted to make it sink beneath the surface of the water when it reached the pond. Then men, with long pike-poles, walked out on the logs and pushed several of them upon the sunken car. The logs were then fastened to the car with chains, a signal was given, and the drum was wound up and the cable that drew the loaded car up the incline and into the mill.

Across from the Essex Mill on the west bank of the Truckee River was the terminus of several miles of chutes which brought down logs from the mountainous country above. These chutes were fashioned of heavy poles laid in a straight line from the crest of the mountain to the Essex Mill dam in the Truckee River.

When Hamlin & Doane had done their last cutting around Essex at the close of the 1886 season, they had already chosen their new mill site at State Line. Their new tract was deeper in the mountains and 5 miles farther up the Truckee River where, they estimated, a 10-year supply of timber stood. From Essex they shipped lumber over the Central Pacific for the new buildings at State Line. The railroad paralleled the Truckee River there. Between the track and the river was a narrow flat where the cabins of the employees were built. The State Line Mill itself was put at the mouth of a canyon across from this flat and there was just enough level ground below the mill to stack the lumber as it came from the saws. On the opposite side of the canyon stood the bunk house, the cook shack and the company store.

Large numbers of horses and oxen were used at the logging camp of the State Line Mill to haul logs over the net work of chutes and down the main chute to the steam-propelled mill. Through 1894 and 1895 the chief logging site was Lynham Camp. In 1900 the State Line Mill closed down, having cut about 3 million feet annually.

Near the source of the water supply of the City of Reno, high up in Hunter Canyon, P. L. Flanigan operated the Flanigan Mill & Lumber Company during the 1900's. He flumed his lumber down Hunter Creek and ran the plant until 1912 when it was bought by W. F. Stevens and C. P. Sherman and moved from Hunter Canyon to a little valley near Lawton Springs, east of Reno. At the new mill site stood about 25 million feet of white pine. Northwest from Reno some 10 or 12 miles in Dog Valley, Sierra County, were the holdings of the Crystal Peak Lumber Company owned by Hamlin, Meacham & McIntosh until 1879. In that year Patrick Henry, son-in-law of Elle Ellen, went into partnership with Frederick Katz and they bought the Crystal Peak Company which included a sawmill in Dog Valley, a yard at Crystal Peak and a V-flume 5 miles long connecting the mill and lumber yard. As soon as Katz & Henry took over the property they extended the flume to Verdi so that lumber from the mill could be run and landed at a side tract in east Verdi

where, at present, the bridge crosses the Truckee River.

In Dog Valley they had about 6 million feet of standing timber which in 8 years they had cleared off at the rate of from 4 million to 6 million feet annually. At first the Central Pacific Railroad was their chief customer but from 1883 to 1889 while the Truckee Lumber company operated the mill, the latter used most of its output. This was the only big sawmill in Dog Valley during the eighties.

On the north side of Dog Valley, Laherty (Larrity) & Hall began to run their new sawmill in June of 1896. The capacity of the mill was 50,000 feet a day. They installed the old boiler from the Snodgrass Mill which operated at the first Dog Valley Summit in the early sixties, but it blew up after a few months⁹⁵. This company logged with Dolbeer donkeys and horses and, during 1900 through 1902, took off about 3 million feet just east of Crystal Peak.⁹⁶

Just south of Crystal Peak, Larrity & Mitchell started the Crystal Peak Mill in 1897 but in that autumn Larrity sold out his interest to Porter. Porter & Mitchell then changed the name of the plant to the Sunrise Mill, which, with a daily capacity from 20,000 to 25,000 feet, cut off about 16 million feet of virgin timber from Section 36 from 1897 until 1901. They normally operated from May through November each year, using chutes and horses for logging. They sold the bulk of their output to the Verdi Lumber Company for bridge timbers⁹⁷.

In 1902 Mr. Bruhns had joined the partnership of Porter & Mitchell and they moved the Sunrise Mill to Pine, a station on the Boca & Loyalton Railroad about 4 miles north of Boca on the Little Truckee River⁹⁸. There they held 2 1/2 sections of good pine timber high on the mountain and they chuted this down. They used Dolbeer donkeys during the 5 1/2 years of logging at this site and cut off from 12 million to 15 million feet. In the fall of 1907 they moved the mill to a point a mile south of the mouth of Merrill Creek, cutting there until the close of 1908 when they retired from the lumber business because they had exhausted their timber. O. M. Ward took over the mill in 1908 and for 4 or 5 years cut over 3 sections of Hobart's timber which stood on the mountain east of the creek⁹⁹.

In December 1901 Charles Burkhardt, J. H. Bachelder and Robert Gracey secured 3 sections of virgin timber in Jones and Merrill Valleys and built a sawmill in Merrill Valley. From 1902 through 1907 they cut off most of the 30 million feet of Jeffrey pine at

⁹⁵From information supplied directly to R. C. Wilson by Pat Mitchell, Verdi, Nevada.

⁹⁶From Information supplied directly to R. C. Wilson by J. B. Casey, Sparks, Nevada.

⁹⁷From information supplied directly to R. C. Wilson by Horace Porter, Washoe County, Nevada.

⁹⁸ This is now a State camping area north of Boca Reservoir.

⁹⁹From information supplied directly to R. C. Wilson by Horace Porter, Washoe County, Nevada.

this site; Hobart later logged out the small amount they left¹⁰⁰. They marketed their lumber through their company at Boca, the Merrill Valley Lumber Company.

In the extreme eastern end of Nevada County near Bronco, Kidder Brothers bought some timberland from A. M. Wicks. By August their sawmill was in operation and soon they had built a flume from the mill site to Bronco through which they sent the lumber cut off of this tract during a 2-year period of cutting, from 1891 through 1892.

In the fall of 1894 the sawmill of Black & Simonds began cutting in the timber east of Floriston and continued cutting at that site until 1898¹⁰¹.

Stewart McKay and J. A. Stewart put up a new mill on their timberland near Union Mills in the spring of 1891. Six years later Mr. McKay bought his partner's interest and moved the mill to Sardine Valley to a "fine belt of timber". From that mill he shipped his lumber to Overton (Hobart Mills) over a railroad nine miles in length and from Hobart Mills over the railroad of the Sierra Nevada Wood & Lumber Company into Truckee.

From 1899 through 1917 I. A. Smith and Scofield operated sawmills in the vicinity of Truckee. Their first mill was a small one on Alder Creek where they cut until early 1902, when they built another mill in Russell Valley, usually known as the Smith Mill. The plant turned out lumber at the rate of 40,000 feet a day and during 1903 cut 7 million feet. Until 1917 this mill supplied the lumber for the company's planing mill and first box factory at Truckee which J. L. Crabtree bought in 1905 and for their second box factory built in 1908 on the site of the old Davies Mill, one mile east of Truckee.

Although the main plant of the Roberts Lumber Company was at Loyalton, outside of the Truckee Basin, the company also maintained a sawmill at Boca from 1901 to 1904 as Boca was the terminus of their line, the Boca & Loyalton Railroad. This railroad tapped their timberlands in Sierra Valley in Township 20 North, Range 16 and 17 East, a tract west of Dog Valley. This timber was logged intensively from 1901 through 1908 and the land bore evidence of the use of donkey engines which had torn up the younger growth and injured the uncut trees. The trees were closely utilized, being cut to an 8 or 10-inch diameter. Roberts Lumber Company ceased operating in Sierra Valley at the end of 1908 but during 1909 they took 10,000 cords of white fir from the Truckee Canyon and in 1910 cut another 10,000 cords in Anderson Canyon in order to fill a contract with the Floriston Pulp & Paper Company.

For 16 years the Davies Mills cut timber at four mill sites near Truckee. They began operations in 1909 when Llewellyn Davies and his three sons bought a sawmill and box factory at Truckee where they maintained their remain office throughout all their operations in the region. In May of that year they also built a sawmill on Alder Creek which they ran until the close of 1902. Early in 1903, upon the death of the father, the sons moved the mill from Alder Creek to the eastern end of Donner Lake. They had

¹⁰⁰From information supplied directly to R. C. Wilson by Robert Gracey.

¹⁰¹From information supplied directly to R. C. Wilson by W. O. Grignon, Verdi Nevada.

bought about 25 million feet of timber at the upper end of the lake. This they cut and towed down to the mill at the other end, clearing the tract off by the close of 1904.

From Donner Lake they moved to Martis Creek, their mill there beginning to saw in April 1905. The following month their box factory at Truckee burned down and was never rebuilt although the sawmill there continued to operate at the rate of about 3 million feet annually.

The Davies Box & Lumber Company continued to expand in 1905 by acquiring the Charles Mitchell stand of more than 100 million feet of timber in Sardine Valley. There in October of that year they built a sawmill at the site later called Davies' Spur which was near the Boca & Loyalton Railroad about 11 miles north of Boca. The mill had a daily cutting capacity of 50,000 feet and the company expected to have enough timber to last, at that rate, for at least 12 years. Actually, they cut there for 10 years and it was the site of the Davies' longest operations in the Truckee Basin. There in the spring of 1907 they built a box factory which ran until August 21, 1908 when it burned, together with about 4 million feet of cut lumber, about half of the season's work.

In 1908 the Southern Pacific Railroad had a stand of red fir in Sardine Valley and entered into a deal with the Davies Company whereby the logging company purchased the timberland. This, together with the Mitchell timber secured in 1905 kept the mill in operation until the close of 1915. In the spring of 1916 the Davies Box & Lumber Company bought a tract of timberland near Blairsden in Plumas County and moved out of the Truckee Basin.

Davis Smith's 80-acre timber tract lay 5 miles above Truckee on the road to Hot Springs, now Brockway. His first shingle mill burned in the spring of 1880 but was rebuilt and running full blast by the following July, turning out 40,000 shingles every day. In July 1881 he sold his mill and timberland to James Sheritt and Andrew Miller. They turned out 8 million shingles during 1882 and records indicate that they operated during 1883 at a daily capacity of 40,000 shingles.

From 1887 until about 1898 Mr. Smith was the partner of J. L. Lewison in the mill on Coldstream Creek in Placer County. Lewison & Smith began operating their new mill on Coldstream, southwest of Donner Lake, in September 1887. By the end of November they had cut 1 million feet of lumber. They built a dam across Coldstream which would float 700,000 feet of logs. A flume a mile and a half in length took lumber from their mill to their yard at Stanford siding on the Southern Pacific and this flume also extended back into a body of fine red fir and pine timber for a distance of 4 1/2 miles from which point not less than 10,000 cords of wood were flumed yearly. Their annual cuts ran from 1 to 2 million feet. In 1892 they supplied 300,000 feet of snow shed material and 30,000 ties to the Southern Pacific Company.

In 1902 "the largest wood contract ever let in the Truckee Basin" was secured by David Smith. The contract called for 50,000 cords of 4-foot wood for the Floriston Pulp & Paper Company to be used in making paper for the Pacific Coast Dailies. Some was also used to make orange wrappers. In order to fill the contract Mr. Smith built a flume into his heavily wooded tract on Coldstream where he had about 60 men cutting and chopping in Strong's Canyon south of Donner Lake, at the rate of about 7,000 cords a year.

Near Tallac, in El Dorado County, one of the first electric-

run sawmills of the Truckee Basin began to operate. The plant, belonging to Lawrence & Comstock, generated its power from Tallac Creek, a mile away and had a daily capacity of 25,000 feet. One Hundred and fifty men worked at this mill.

FOURTH PERIOD, 1910 THROUGH 1936: DEPLETION OF TRUCKEE BASIN VIRGIN FOREST

During the final period of lumbering in the Truckee Basin the last of the virgin pine forests were cleared off and almost all the operators then cutting were taking some second growth timber: The Verdi Lumber Company, for instance, held in 1912 some 14,080 acres in eastern Sierra County of which 6,640 acres were virgin and 9,440 were cut over. Similarly, the Hobart Company in the same year owned 65,000 acres some 12 miles northwest of Hobart Mills; of this tract about 36,308 were virgin and the rest were cut over. Earlier the Floriston Pulp & Paper cut virgin timber but this was red and white fir which the timber operators had left¹⁰². With the smaller operators this situation was also true.

SMALLER OPERATORS OF THE FOURTH PERIOD, 1910 THROUGH 1936

Less than a half dozen small operators cut timber during the last two decades in the Truckee Basin. In Sierra County was the plant of McMillan & Norn at Star, 3 miles out of Boca on the Boca & Loyalton Railroad. They installed the sawmill machinery of the Boca Mill Company in their new plant in August 1909 and operated at the rate of 40,000 feet a day until late October in 1913 when fire destroyed the mill and it was never rebuilt.

Also in Sierra County was the mill in Dog Valley in 1919. They did their logging with horses and cut off about 3 or 4 million feet from 1909 to 1926.¹⁰³ A pile of sawdust at the first Dog Valley Summit, about 4 miles from Verdi, marked, in 1937, the site of their operations.¹⁰⁴

South in Placer County was the mill of R. C. Gracey. He moved the abandoned Euer Valley Mill to a site on Deep Creek a mile and a half up the creek from its junction with the Truckee River. With a steam circular saw of 30,000 feet daily capacity he cut out about 4 or 5 million feet of lumber, chiefly fir, during 1917 and 1918. This he flumed to the Tahoe Railroad which conveyed it to Truckee and from Truckee it was carried by the Southern Pacific to the paper mill at Floriston.

¹⁰² There has always been some question on the "clear cutting" supposedly done by the timbermen. Timber cutters cut large trees for mine timbers; they cut logs for timber as well. In addition to the lumbermen were charcoal makers, shingle, lath, sash-makers, box-makers, as well as cordwood cutters. Each of these required specialized and selective timber cutting for them to make the best product. Clear cutting was not in the best interests of timbermen, as only very large trees were economically advantageous to cut.

¹⁰³ From information supplied directly to R.C. Wilson, by J.B. Casey, Sparks, Nevada

¹⁰⁴ From information supplied to R.C. Wilson, by J.B. Casey, Sparks, Nevada

R. H. Watson had a mill in Placer County located half a mile north on Burton Creek. From 1927 to 1933 he cut over about 240 acres, chiefly second growth timber which grew back of his mill, although he hauled logs from points as far away as Squaw Valley and Carnelian Bay.¹⁰⁵

Down in El Dorado County near the source of the Upper Truckee River C. G. Celio & Sons supplied local lumber needs from their mill at Meyer's Station from 1911. They cut about 500,000 feet annually from 1915 to 1917. In 1923 their mill and logging camp ran at full capacity. By the end of the 1927 season they had cut out their timber in the upper end of Lake Valley and had to move their mill to a new site. The second mill was a new and larger plant which they built in September 1928 on the county road between Meyers and Fallen Leaf Lake.

In 1915 another little sawmill, called the Fallen Leaf Mill, was producing timber at Fallen Leaf Lake.

THREE LAST BIG MILLS IN THE AREA

The story of lumbering operations in the Truckee Basin closes with the records of the three big operators who did the last cutting there - the Verdi Lumber Company, closing in 1926, and the Sierra Wood & Lumber Company which shut down its plant at Hobart Mills at the end of the 1936 season. There from the account of California's big pulp mill, the Floriston Pulp & Paper Company, known from 1914 as the Crown-Willamette Paper Company, which until 1930 cleared off large patches of red and white fir left by the lumbermen.

The owners of the Verdi Lumber Company, Lonkey & Smith, continued throughout the '80's to supply lumber for the factory and planing mill at Verdi and for their large box factory and lumber yards at Camp 16, as well as their yards at Virginia City, from the mill on Prosser Creek, established in 1873. They took over the Banner Mill on Sagehen Creek in 1882 and thereafter operated it along with the Prosser Creek mill. Their output during the eighties ranged from 2 million feet to 7 million feet. By 1883 about a third of the timber in the tract on Prosser Creek had been cut over; at the Banner Mill they had cleared about 4 sections out of 20. In July 1889 the mill on Prosser Creek burned and during that winter snows crushed the flume to the Banner Mill.

Thereafter Oliver Lonkey devoted his energy to the Verdi Mill Company in which he had become a principal investor in 1874. At that time the factory was located about a mile down the Truckee River from Verdi where in 1881 Lonkey & Smith had installed new machinery for box making. Records indicate that this plant in 1888 sent out daily shipments of lumber prepared for the construction of boxes and mention orders for 300,000 boxes in 1889. The box factory was supplied with lumber from the Verdi company's sawmill in Dog Valley. It came down to Verdi through a long winding flume which crossed the Truckee River at Verdi on a timber trestle alongside of the wagon bridge. This factory burned in 1888.

But in the summer of 1889 Oliver Lonkey built a new mill and box factory on a site just outside the limits of Verdi: the mill stood north of the present highway at the west end of Verdi and

¹⁰⁵ From information supplied directly to R.C. Wilson, by Pat Mitchell, Verdi, Nevada

the box factory to the south of the highway¹⁰⁶. The mill very modern for its time, was steam-run, used sawdust¹⁰⁷ for fuel and had a capacity of 60,000 feet a day. To this up-to-date equipment at the new plant Mr. Lonkey added a steam wagon¹⁰⁸ to convey lumber from the sawmill in Dog Valley to the factory at Verdi. This three-wheeled steam vehicle hauled wood from the mill in Dog Valley at the rate of seven to twelve wagons loads per trip. The bodies of these steam wagons, used by several operators of the period, were set up on three powerful wheels in tricycle fashion, one in front so adjusted that it could be turned by a steering apparatus in the engineers cabin. Long steel rods were driven by pistons fitted in the cylinders attached to the sides of the boiler. In the rear was the fire box to which the fireman fed chunks of wood piled on a rack nearby. The steam wagon could travel at about 4 1/2 miles an hour when the wagons were loaded with timber. When they were empty, it could roll along at 6 miles an hour. Bridges had to be strengthened and road beds graded more carefully for travel by the steam wagons than for ordinary vehicles but this additional expense was more than offset by the increased amount of lumber hauled.

In addition to using the steam wagon to bring lumber to Verdi from the Dog Valley Mill, the Verdi Lumber Company built a logging railroad to this mill in the nineties. For this they bought some rolling stock from the Virginia & Truckee Railroad and there was great excitement at Verdi on the day when two locomotives, freshly painted and with brass well polished, came steaming in on the bright red driving wheels over the tracks of the Central Pacific, pulling five flat cars behind them! In actual operation the locomotives pushed the flat cars over the 6 or 7 miles of steep, winding track which ran from the factory at Verdi to the mill in Dog Valley.

In 1901 Oliver Lonkey incorporated his business at Verdi with a capital stock of \$300,000 under the name of Verdi Lumber Company. "Captain" W. H. Roberts and J. F. Condon also were investors in the company. Two years later Lonkey died. (His name was Lanthier but it had been changed to Lonkey because this phonetic spelling resembled the pronunciation of his French name.) His adopted son, Camile Lonkey, took over the management of the company.

In 1903 the Verdi Lumber Company began a 5-year period of cutting from their timberlands on both sides of Dog Valley, cutting 9 million feet during 1903. Port Arthur at the north end of the

¹⁰⁶ From information supplied directly to R.C. Wilson by W.C. Grignon, Verdi, Nevada

¹⁰⁷ Sawdust and other debris such as bark has been a problem for the timber industry. The Territorial Enterprise - Tuesday April 4, 1876, p. 2 c. 5 and Territorial Enterprise - Sunday December 2, 1877, p. 2 c. 3 both describe sawdust hindering the flow of water over the delta at Pyramid Lake. Such influence had an effect on spawning fish and other wildlife.

¹⁰⁸ The Mining and Scientific Press - Saturday, June 9, 1860 description of a Barran's Patent Steam Wagon; (photo available Nevada Historical Society under "industry, lumber") The steam wagon was assembled at the Vulcan Foundry in San Francisco. Original design was patented in Europe.

valley was their chief camp during 1905. In the summer of 1908 Crystal Canyon became and remained their principal logging site until 1914. By the summer of 1912 the company's standard gauge railroad, built during the nineties, was extended to their timber tracts in eastern Sierra County which comprised an area of 14,080 acres, 9,440 of which they had denuded even to the seed trees during 1912. Two camps were then established to take off the remaining 4,640 acres: Camp No. 1, situated on the line between Sections 2 and 3, Township 19 North, Range 17 East and Camp No. 2 in Section 1, Township 20 North, Range 17 East. The bulk of the remaining 4,640 acres lay between these two camps on the rugged land between Merrill Creek and Dog Valley. It has to be logged with donkey engines. The company finished clearing this during 1913¹⁰⁹.

At the beginning of 1913 the Verdi Lumber Company "absorbed" the Tonopah Lumber Company, thus further adding to its timber holdings. They now owned 40,000 acres in Sierra and Washoe Counties from which they expected to cut some 400 million feet. By 1914 the Verdi Lumber Company had branch establishments in eight Nevada towns. They installed new machinery in the sawmill at Verdi and were turning out 120,000 feet of lumber a day, and the cut being 90 percent high grade pine and the remainder fir and cedar. Low grade lumber was used in box making. In 1914 their timber holdings numbered 15,140 acres of cut-over land, forming a solid block along the east boundary of the Tahoe National Forest with 480 acres of this inside of the Forest.

The company began its 1915 logging season at Summit Camp in the north end of Dog Valley and built their logging railroad into the timber in Lemon Valley which they had purchased in 1911. In the first year of cutting on this tract, 1915, the Verdi Sawmill cut 25 percent more timber owing to the exceptionally fine grade of logs taken from the Lemon Canyon site. Lemon Valley remained the chief cutting site of the company until 1926: they logged out the timber north of Lemon Canyon in Bear Valley until the close of 1917; then they cut on the south of Lemon Creek through 1924; finally, they swung back to the north slope of Lemon Canyon and by 1926 had cut over the entire Lemon Creek drainage¹¹⁰. Records of the annual cuts in the Lemon Valley tract are available for 3 of the 11 years of cutting there: 20 million feet in 1917 and 1918 and 19 million feet in 1919.

In September 1917 the Verdi Lumber Company bought the mill of the Marsh Lumber Company at Loyalton and formed the Clover Valley Lumber Company, marketed its annual cuts of this plant which in 1918 amounted to 10 million feet.

On August 26, 1919, fire swept over the north yards of the company in Verdi, consumed about 3 million feet of lumber, the company sustaining a \$75,000 loss. Within a year another fire totally destroyed the box factory at Verdi on July 18, 1920, entailing a loss of \$20,000. But within a week the work of rebuilding the factory began and it was turning out shooks by the following September. The sawmill ran without interruption for 6

¹⁰⁹From information supplied directly to R. C. Wilson, by J. B. Casey, Sparks, Nevada.

¹¹⁰ From information supplied directly to R. C. Wilson, by J. B. Casey, Sparks, Nevada.

years more, cutting the logs brought over from Lemon Valley on the broad gauge tracks on the company's 30 mile railroad.

During 1920 the President of the Verdi Lumber Company, A. Revert, invented a new type of railroad tie, designed to effect a considerable savings in timber. The "Revert Tie" was built from a number of small pieces of timber all held firmly together by a series of wooden dowels. By the spring of 1920 the company was using these ties on its logging railroad.

The Verdi Lumber Company¹¹¹ closed its forty-ninth year of operations in September 1926, sold its remaining timberland and tore up rails from its logging line. Only the box factory continued to run.

For the Sierra Nevada Wood & Lumber Company, the year 1880 was one of expansion. Its owners, Hobart & Marlette, had prepared for this in 1877 when they acquired large timber holdings in El Dorado, Placer and Washoe Counties bordering Lake Tahoe. "The number of acres of forests they own may be counted by the tens of thousands", reported the California Illustrated Times of December 25, 1877.

From 1880 Incline, on Crystal Bay, became the center of Hobart & Marlette's lumbering activities under J.B. Overton's supervision. Their initial cut here on the northern shore of Lake Tahoe during 1880 was 8 million feet of lumber, and 50,000 cords of fuel wood. From the company's land on Carnelian Bay 40,000 cords of wood were taken.

Incline took its name from a device adopted to transport lumber to the top of the mountain chain bordering the lake on the east, the first leg in transport to the Virginia & Truckee Railroad. The device was a 1600-foot incline which was operated by an endless cable, the car on one side going up and on the other side coming down in trip and vice versa. The lumber thus elevated was thrown into a V-flume and carried to Lakeview on the Virginia & Truckee Railroad which took it on to the Comstock mines.

Until the late eighties the Sierra Nevada Wood & Lumber Company kept cutting from their lands on the northern shore of Lake Tahoe, taking out wood at the rate of 40,000 to 50,000 cords annually. The peak cut of this decade was 12 million feet sawed by the mill at Incline during 1887. The status of the company's lands in 1888 was given by its agent, Mr. William B. Tiffany, to the California State Board of Forestry for its 1887-1888 biennial report:" according to Mr. Tiffany's statement, the company then owned more than 100,000 acres: In Sierra County, 25,000 acres; In Nevada County, 11,000 acres; in Placer County, 12,000 acres; in Washoe County, stripped of trees, 35,000 acres; and in Douglas County, mostly stripped of trees, 8,000 acres. Mr. Tiffany concluded, "While we strive to prevent the waste or destruction of timber, we do not share the fears of some concerning the loss of present forests, and we hold our lands, untouched or stripped, at about the same valuation."

Early in 1888 the company awarded a big contract for all the timber on a section and a half of land at Katz's Flat to C. H. Barton and J. H. Bachelder who spent 2 years filling this order. In 1889 accessible timber was getting scarce. "Lively times at Folsom's wood camp near Small's Station read the Virginia Chronicle

¹¹¹ The Verdi Lumber Company was destroyed by fire Thursday, May 6, 1926. See Reno Evening Gazette, page 1 of that date.

of September 16, 1889, "At present it is all the men can do to keep the mill running at Incline." In the summer of 1891 Charles Blethen, a wood contractor at Sand Harbor about 5 miles southeast of Incline, ran his narrow gauge railroad north to the sawmill at Incline 7 days a week at the rate of 75,000 feet of logs each day.

By the end of 1893 the Sierra Nevada Wood & Lumber Company, having logged over about 20,000 acres near Incline, concluded operations on the shores of Lake Tahoe. In January 1894 they exchanged their 5,000 acres of timberland lying between Lake Tahoe and Truckee with the Truckee Lumber Company for another 5,000 acres of dense forest between Truckee and Sierra Valley and in September of the next year (1895) moved their mill from Incline to a point on their new holdings about 7 miles north of Truckee, naming their new mill site Hobart Mills. This site was sometimes referred to as "Overton" from the name Colonel J.B. Overton, Superintendent.

The new plant consisted of a new sawmill, box factory, and a sash, door and blind factory. The 1-1/2 Allis Bandmill and a 52-inch circular saw, constantly running, had no difficulty in keeping up the general average of about 130,000 feet of 1-inch lumber a day. A No. 3 Wicks Gang and two Allis Pacific Coast Edgers and one Gang Trimmer completed the prominent machinery in the mill, all of which was driven by two Reynolds-Coorliss engines furnished with steam from five tubular boilers. The filing rooms were fitted with every possible tool and device. One of the most up-to-date kind of water wheels furnished the power for these two rooms. One of the most unusual features of the mill was a visitors' gallery which stretched across the mill lengthwise and afforded the public an excellent view of the workings of the mill.

By October 1898 the Sierra Nevada Wood & Lumber Company's timber holdings numbered some 75,000 acres of white, yellow and sugar pine together with some fir. Of this the company planned to log 40,000 acres with their large force of operatives and latest type of machinery and they estimated that this acreage would yield more than a billion and a half feet of marketable lumber.

During 1888 they stepped up their daily output to 150,000 feet and the box factory was filling some substantial orders, such as one from Southern California for 999,000 orange boxes. As the capacity of the box factory was 9,000 boxes a day, this order kept it running constantly for 111 days and amounted to 222 carloads.

In the summer of 1900 Manager C. T. Bliss made some improvements in the plant of the Sierra Nevada Wood & Lumber Company, building a new store, a boarding house and some dwelling for the employees. By providing snow sheds over the track of the company's 6-mile broad gauge railroad from Hobart Mills to Truckee and equipping the engines with snow plows, he enabled the company to operate throughout the winter months. They had built the railroad in the late 1890's and bought a historical piece of rolling stock to run over the tracks... This was the old engine, "Stanford No. 1", a combination of engine and tender on four wheels. In the seventies when it first came around the Horn it was a wonder because it could just barely move four ordinary passenger coaches over the tracks of the Sacramento Division. Subsequently it did switch work at the Capital City, then ran on the Goshen-Visalia branch and later on the Market Street-Hayes Valley line in San Francisco. It was then sold to the San Joaquin Coal Company to run for a brief time on the short line between Coalinga and Alcalde.

In the summer of 1901 the company put up a small mill in some

timber on Alder Creek about 2 miles below Davies' Mill. This had a capacity of from 20,000 to 30,000 feet a day and this was hauled to the railroad with teams. However, from 1897 when the mill at Hobart Mills began sawing, the bulk of the timber was taken from the company's forests in Sierra County. Their annual cut was 28 million feet during 1900, one-half of this being used in the box factory. From 1901 through 1904 about 30 million feet were cut each season. In the spring of 1905 they improved the mill so that it could cut from 45 million to 50 million feet and in 1906 it ran at full capacity. The cut for 1907 was 23,130, 086 feet, and in 1909 the output was "the usual cut" plus an order for 9 million feet of construction timbers from the Southern Pacific Railroad. During the 1900's the company's door department was rushed with orders for sugar pine doors, big shipments being made to Colorado and some to Australia.

From 1910 Hobart Mills continued to cut off Sierra County timber, although they owned land in Nevada and Placer Counties, their entire holdings in these three counties comprising 65,680 acres of which about 36,308 were virgin and 29,372 were cut over. They were logging at two camps 12 miles northwest of Hobart Mills from 1910 through 1912, the logs being hauled over a narrow-gauge railroad to the saws at Hobart Mills which turned out lumber at the rate of 175,000 feet per 10-hour day. During the 1910 to 1919 decade they cleared off their Sierra County timber at the rate of 28,268,322 feet during 1910; 30 million feet in 1916 and the same amount in 1917, mainly sugar pine, and in this year they shipped out three carloads of boxes daily. The cut during 1918 was 32 million feet and for 1919, 23,283,720 feet.

In 1914 D. Olisa succeeded C. T. Bliss was Manager of Hobart Mills. In 1917 the Sierra Nevada Wood & Lumber Company was dissolved as a separate corporation and all of its property and business was returned to its sole stockholder, Hobart Estate Company, which there after conducted the plant at Hobart Mills. And George D. Oliver who had been in charge of the company's logging since 1909 was made general manager and served the company in this capacity until Hobart Mills ceased to operate in November 1936.

From 1917 as fast as Hobart Mills reached the small tracts of timber of the Tahoe National Forest in their logging operations, they bought parcel after parcel of timberland from the Forest Service until they ceased to cut timber in 1936. By the mid-1920's the extent of their timberland totalled an area of 85,000 acres, principally pine. The annual cuts during this decade ranged from about 20 million to 28 million feet. Their box factory ran the year through from 1921 and sent most of its average annual product of about 50,000 feet of shook in the form of orange crates to Southern California. The company maintained yards in Nevada at Reno, Carson, Minden and Lovelock.

For logging operations they continued to use their narrow gauge railroad, built 20 miles long in 1917, increased to 25 miles by 1920 and again to 30 miles by 1922. Two camps at an elevation of 6,000 feet supplied logs and they then used 12 Willamette donkeys and a McGiffert loader. Logging Superintendent David Lacey put some of the company's logging under contract during 1926, when, in addition to supplying their own saws at Hobart Mills, the company furnished a quantity of white pine to the paper mill at Floriston.

In 1928 the company decided to test out tractor logging and

replaced the donkeys with "caterpillars" of which they had six by 1934. Hobart Mills ceased logging at the end of the 1936 season, having maintained an annual cut of about 25 million feet a year since 1897. During 40 years they and cut about one billion board feet - some 29,500,000 feet of this from the Tahoe National Forest.

Although the Floriston Pulp & Paper Company did not come into existence until 1899, yet as early as 1868 when the Central Pacific Railroad first crossed through the Truckee River country into Nevada, some eastern capitalists came to Truckee to consider the building of a paper mill along this stream on account of the pure water and excellent fir and timber it afforded.

Nothing ever came of the plan but 30 years later a company sent experts to Floriston to make surveys and wood tests for a pulp plant. They found that a 2,000 horse power could be developed from the Truckee River at this point and that a sample car load of wood grown in the vicinity produced, by actual test, 250 pounds more pulp to the cord than the wood commonly used in Oregon by the same company. So in 1899 the Floriston Pulp & Paper Company was organized by Fleischhacker Brothers and others. They began building the paper mill at Floriston in the summer of 1899 and by July 1900 this "second largest paper mill in the United States" embarked upon a 30-year period of operation. It stood at Floriston along the Truckee River on a tract of 14,000 acres which was thickly covered with sugar and yellow pine, cedar and fir. Fir, chiefly, was used for pulp and the mill consumed about 80 cords every 24-hours a day 7 days a week¹¹². Duffy Camp in Washoe County and east of Floriston was the center of the company's logging operations on the original tract until 1914 and here they used a portable mill from which they built a flume to run wood to the factory at Floriston.

While cutting timber from its own land, the company also let out large contracts for fir. In 1902 the Sierra Nevada Wood & Lumber Company got an order for 15,000 cords and the Loyalton Lumber Company one for 12,000 cords. And a third contract, the largest wood contract ever let in the Truckee Basin, was awarded to D. J. Smith who agreed to furnish 50,000 cords of 4-foot wood at the rate of about 7,000 cords a year from his timberland in Placer County. To enable him to fill this order, Mr. Smith built a flume into his heavily wooded tract on Coldstream Creek. In 1909 Manager Geisendorfer of the Roberts Lumber Company of Loyalton got out 10,000 cords of 4-foot wood for the Floriston Mill, cutting this in the Truckee Canyon from land previously logged for pine by the Roberts Company. He took off another 10,000 cords from Anderson Canyon during 1910.

By 1910 the Floriston Pulp & Paper Company was making 8,750 tons of paper pulp valued at \$500,000.

During 1912 the company came into the control of the Crown-Columbia Paper Company. At that time its holdings numbered about 32,380 acres of timberland, 20,200 acres in Placer County and 12,180 acres in the vicinity of Duffy Camp where the company had been logging since 1900. Practically all the white and red fir and been cleared off of this acreage by 1914.

The company's methods of logging there were very interesting: They began cutting the logs in October in order that they might

¹¹² From information supplied directly to R. C. Wilson, by A. Schmidt, Floriston, California.

season for 6 or 8 months. All trees were cut to a diameter of 12 inches and each tree was cut to a 4 or 6-inch top diameter. The system of winter cutting, however, made it necessary to leave stumps as high as 6 feet so that many cords were thus left in the woods in this form. In summer, or as early as the weather permitted, the cut logs, thoroughly seasoned, were packed on mules or by horse teams and wagons to the company's flume which conveyed them to the mill at Floriston.

In 1914 with the exhaustion of fir around Duffy Camp, logging operations were moved over the Sierra Nevada to Brown's Camp near Soda Springs. In addition the company contracted to cut fir from 2,120 acres in Placer County which belonged to the Truckee Lumber Company. These two sources of timber supply kept the mill at Floriston going until the early part of 1921 when the company, known from 1914 as the Crown-Willamette, began to clear off timber from its holdings at Stanford, about 2 miles south of Donner Lake. They installed a tramway to haul wood down the mountain sides in buckets and it was then loaded onto cars and taken via the Southern Pacific Railroad to Floriston. The buckets were controlled by cables and operate at the rate of one a minute, each bucket holding half a cord of wood. The tramway could operate in 10 feet of snow.

The Crown-Willamette Company extended its timberlands in the spring of 1922 by purchasing 3,451 acres of the Richardson land in Placer County. The next year they were taking out 15,000 cords of white and red fir from Stanford vicinity. In 1923 they gave the Hobart Estate Company a contract for 10,000 cords of wood and in 1926 Hobart Mills was still furnishing white fir to the paper mill.